WEST Search History

DATE: Friday, March 21, 2003

Set Name side by side	Query	Hit Count	Set Name result set
	DB=USPT,PGPB,JPAB,EPAB; PLUR=YES; OP=OR		
L34	l20 and (pi or isoelectric)	20	L34
L33	L32 and ph	537	L33
L32	"pi value"	788	L32
L31	l20 and l28	4	L31
L30	l20 and l28	4	L30
L29	L28 and l27	12	L29
L28	@PY <= 1998	12674398	L28
L27	L26 and milk and fibrinogen	17	L27
L26	L25 or l22 or l23 or l24	1614	L26
L25	(((530/416)!.CCLS.))	655	L25
L24	(((530/414)!.CCLS.))	253	L24
L23	(((530/412)!.CCLS.))	1083	L23
L22	((530/414)!.CCLS.)	253	L22
L21	L20 and (transgen$ or chelat$ or bed or adsorption)	39	L21
L20	L19 and (edta or egta or citrate)	44	L20
L19	L18 and ph	49	L19
L18	L17 and fibrinogen and milk	49	L18
L17	cex or "cation exchange chromatography"	4114	L17
L16	5639940.pn. and (chromatography)	1	L16
L15	5639940.pn. and (cation$)	0	L15
L14	5639940.pn. and (chelat$)	0	L14
L13	5639940.pn. and ("ion exchange" or ion-exchange)	0	L13
L12	5639940.pn. and (adsorption)	0	L12
L11	L9 and l1	846	L11
L10	L9 and l2	18	L10
L9	separat$ or purif$ or isolat$	2670337	L9
L8	L4 and adsorption	163	L8
L7	purification same fibrinogen	325	L7
L6	5834420.pn.	1	L6
L5	L4 and (bed same adsorption)	3	L5
L4	L3 and (edta or egta or citrate)	580	L4
L3	L1 and ph	770	L3

L3	L1 and pH	779	L3
L2	L1 and (transgenic same fibrinogen)	18	L2
L1	fibrinogen and milk	867	L1

END OF SEARCH HISTORY

Connecting via Winsock to Dialog

Logging in to Dialog

Trying 31060000009999...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
****
ENTER PASSWORD:
****
Welcome to DIALOG

Dialog level 02.12.60D

Last logoff: 21mar03 15:44:59
Logon file405 21mar03 19:43:22
** Preliminary records through 2/12 **
SYSTEM:HOME
Cost is in DialUnits
Menu System II: D2 version 1.7.8 term=ASCII
*** DIALOG HOMEBASE(SM) Main Menu ***

Information:
1. Announcements (new files, reloads, etc.)
2. Database, Rates, & Command Descriptions
3. Help in Choosing Databases for Your Topic
4. Customer Services (telephone assistance, training, seminars, etc.)
5. Product Descriptions

Connections:
6. DIALOG(R) Document Delivery
7. Data Star(R)

/H = Help /L = Logoff /NOMENU = Command Mode

Enter an option number to view information or to connect to an online
service. Enter a BEGIN command plus a file number to search a database
(e.g., B1 for ERIC).
? b 410
21mar03 19:43:23 User268147 Session D56.1
$0.00 0.155 DialUnits FileHomeBase
$0.00 Estimated cost FileHomeBase
$0.00 Estimated cost this search
$0.00 Estimated total session cost 0.155 DialUnits

File 410:Chronolog(R) 1981-2003/Mar
(c) 2003 The Dialog Corporation

Set Items Description
--- ----- ----------
? set hi %%%;set hi %%%
HILIGHT set on as "
HILIGHT set on as "
? b 5, 34, 71, 76, 285, 251
>>> 76 does not exist

>>>1 of the specified files is not available
21mar03 19:44:08 User268147 Session D56.2
$0.00 0.070 DialUnits File410
$0.00 Estimated cost File410
$0.17 TELNET
$0.17 Estimated cost this search
$0.17 Estimated total session cost 0.225 DialUnits

SYSTEM:OS - DIALOG OneSearch
File 5:Biosis Previews(R) 1969-2003/Mar W3
(c) 2003 BIOSIS
*File 5: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.
File 34:SciSearch(R) Cited Ref Sci 1990-2003/Mar W3
(c) 2003 Inst for Sci Info
*File 34: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.
File 71:ELSEVIER BIOBASE 1994-2003/Mar W3
(c) 2003 Elsevier Science B.V.
File 285:BioBusiness(R) 1985-1998/Aug W1
(c) 1998 BIOSIS
*File 285: This file is closed (no updates)
File 251:ONTAP(R) Food Sci.& Tech.Abs
(c) 1985 FSTA & VITIS IFIS Publishing

Set Items Description
--- ----- ----------
? s fibrinogen and milk
50514 FIBRINOGEN
178159 MILK
S1 156 FIBRINOGEN AND MILK
? s s1 and (cex or "cation exchange")
156 S1
393 CEX
352 CATION EXCHANGE
S2 0 S1 AND (CEX OR "CATION EXCHANGE")
? s s1 and sepharose?
156 S1
38626 SEPHAROSE?
S3 5 S1 AND SEPHAROSE?
? type s5/full/all
>>>Set 5 does not exist
? type s3/full/all

3/9/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2003 BIOSIS. All rts. reserv.

09326668 BIOSIS NO.: 199497335038
The plasminogen activation system in bovine milk: Differential localization of tissue-type plasminogen activator and urokinase in milk fractions is caused by binding to casein and urokinase receptor.
AUTHOR: Heegaard Christian W(a); Rasmussen Lone K; Andreasen Peter A
AUTHOR ADDRESS: (a)Dep. Molecular Biol., Univ. Arhus, C.F. Mollers Alle 130, 8000 Arhus C**Denmark
JOURNAL: Biochimica et Biophysica Acta 1222 (1):p45-55 1994
ISSN: 0006-3002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have analyzed the occurrence of components of the plasminogen activation system in bovine milk. Zymographic analyses showed that tissue-type plasminogen activator (t-PA) occurred in association with casein micelles, partially as a complex with type-1 plasminogen activator inhibitor (PAI-1), whereas urokinase-type plasminogen activator (u-PA) was confined to milk leukocytes. Whey contained a component with a plasminogen dependent proteolytic activity which was shown to be plasma prekallikrein (PPK). The u-PA in the milk leukocytes was shown to be bound to urokinase receptor (u-PAR). A purification to near-homogeneity of the bovine u-PAR was undertaken. Investigating the novel t-PA binding to casein micelles by ligand blotting and Sepharose immobilized casein, multimeric forms Of K-casein and dimeric alpha-s2-casein were identified as t-PA binding components. The kappa-casein gene and the fibrinogen gene are believed to have evolved from a common ancestor. Thus, the recent finding that casein enhances t-PA catalyzed plasminogen activation (Marcus, G., Hitt, S., Harvey, S.R. and Tritsch. G.L. (1993) Fibrinolysis 7, 229-236), and the observed t-PA/-casein binding suggests that the casein micelle, which also contains plasminogen, may serve as a matrix for t-PA-catalyzed plasminogen activation in milk

REGISTRY NUMBERS: 9039-53-6: UROKINASE; 9055-02-1: PREKALLIKREIN
DESCRIPTORS:
MAJOR CONCEPTS: Enzymology (Biochemistry and Molecular Biophysics); Membranes (Cell Biology); Reproductive System (Reproduction)
BIOSYSTEMATIC NAMES: Bovidae--Artiodactyla, Mammalia, Vertebrata, Chordata, Animalia
ORGANISMS: Bovidae (Bovidae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals; artiodactyls; chordates; mammals; nonhuman vertebrates; nonhuman mammals; vertebrates
CHEMICALS & BIOCHEMICALS: UROKINASE; PREKALLIKREIN
MISCELLANEOUS TERMS: BASEMENT MEMBRANE; EXTRACELLULAR MATRIX; MAMMARY GLAND; PLASMA PREKALLIKREIN
CONCEPT CODES:
10508 Biophysics-Membrane Phenomena
10808 Enzymes-Physiological Studies
16504 Reproductive System-Physiology and Biochemistry
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
BIOSYSTEMATIC CODES:
85715 Bovidae

3/9/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08182312 BIOSIS NO.: 000094006085
IDENTIFICATION OF A HUMAN LACTOFERRIN-BINDING PROTEIN IN STAPHYLOCOCCUS-AUREUS
AUTHOR: NAIDU A S; ANDERSSON M; FORSGREN A
AUTHOR ADDRESS: DEP. MED. MICROBIOL., UNIV. LUND, MALMO GENERAL HOSP., S-214 01 MALMO, SWEDEN.
JOURNAL: J MED MICROBIOL 36 (3). 1992. 177-183. 1992
FULL JOURNAL NAME: Journal of Medical Microbiology
CODEN: JMMIA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Human lactoferrin (HLf) is an iron-binding protein with antimicrobial activity that is present in high concentrations in milk and various exocrine secretions. HLf is also an acute-phase protein secreted by polymorphonuclear leucocytes, and its binding to a

large number of clinical isolates of Staphylococcus aureus has been described recently from our laboratory. We have now characterised the HLf-staphylococcal interactions in S. aureus strain MAS-89. The binding of 125I-HLf to strain MAS-89 reached saturation in < 90 min and was maximal between pH 4 and 9. Unlabelled HLf displaced 125I-HLF binding. Various plasma and subepithelial matrix protein, such as IgG, fibrinogen, fibronectin, collagen and laminin, which are known to interact specifically with S. aureus, did not interfere with HLf binding. A Scatchard plot was non-linear; this implied a low affinity (1.55 .times. 107 L/mol) and a high affinity (2.70 .times. 108 L/mol) binding mechanism. We estimated that there were c. 5700 HLf binding sites/cell. The staphylococcal HLf-binding protein (HLf-BP) was partially susceptible to proteolytic enzymes or periodate treatment and was resistant to glycosidases. An active HLf-BP with an apparent Mr of c. 450 Kda was isolated from strain MAS-89 cell lysate by ion-exchange chromatography on Q-sepharose. In SDS-PAGE, the reduced HLf-BP was resolved into two components of 67 and 62 Kda. The two components demonstrated a positive reaction with HLf-HRPO in a Western blot. These data establish that there is a specific receptor for HLf in S. aureus.

CONCEPT CODES:
13012 Metabolism-Proteins, Peptides and Amino Acids
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
36002 Medical and Clinical Microbiology-Bacteriology
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
BIOSYSTEMATIC CODES:
07702 Micrococcaceae (1992-)
86215 Hominidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria
Eubacteria
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

3/9/3 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03231715 Genuine Article#: NP340 Number of References: 67
Title: THE PLASMINOGEN ACTIVATION SYSTEM IN BOVINE-MILK - DIFFERENTIAL LOCALIZATION OF TISSUE-TYPE PLASMINOGEN-ACTIVATOR AND UROKINASE IN MILK FRACTIONS IS CAUSED BY BINDING TO CASEIN AND UROKINASE RECEPTOR
Author(s): HEEGAARD CW; RASMUSSEN LK; ANDREASEN PA
Corporate Source: AARHUS UNIV,DEPT MOLEC BIOL,CF MOLLERS 130/DK-8000 AARHUS//DENMARK/
Journal: BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR CELL RESEARCH, 1994, V1222, N1 (MAY 26), P45-55
ISSN: 0167-4889
Language: ENGLISH Document Type: ARTICLE
Geographic Location: DENMARK
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: BIOCHEMISTRY & MOLECULAR BIOLOGY; BIOPHYSICS
Abstract: We have analyzed the occurrence of components of the plasminogen activation system in bovine milk. Zymographic analyses showed

that tissue-type plasminogen activator (t-PA) occurred in association with casein micelles, partially as a complex with type-1 plasminogen activator inhibitor (PAI-1), whereas urokinase-type plasminogen activator (u-PA) was confined to milk leukocytes. Whey contained a component with a plasminogen dependent proteolytic activity which was shown to be plasma prekallikrein (PPK). The u-PA in the milk leukocytes was shown to be bound to urokinase receptor (u-PAR). A purification to near-homogeneity of the bovine u-PAR was undertaken. Investigating the novel t-PA binding to casein micelles by ligand blotting and Sepharose immobilized casein, multimeric forms of kappa-casein and dimeric alpha(s2)-casein were identified as t-PA binding components. The kappa-casein gene and the fibrinogen gene are believed to have evolved from a common ancestor. Thus, the recent finding that casein enhances t-PA catalyzed plasminogen activation (Marcus, G., Hitt, S., Harvey, S.R. and Tritsch, G.L. (1993) Fibrinolysis 7, 229-236), and the observed t-PA/casein binding suggests that the casein micelle, which also contains plasminogen, may serve as a matrix for t-PA-catalyzed plasminogen activation in milk.

Descriptors--Author Keywords: UROKINASE ; TISSUE-TYPE PLASMINOGEN ACTIVATOR, T-PA ; TYPE-1 PLASMINOGEN INHIBITOR ; MILK ; CASEIN ; UROKINASE RECEPTOR ; T-PA BINDING
Identifiers--KeyWords Plus: HUMAN-PLASMA PREKALLIKREIN; AMINO-ACID-SEQUENCE; KAPPA-CASEIN; MONOCLONAL-ANTIBODIES; MAMMARY-GLAND; CELL-LINES; INHIBITOR; PURIFICATION; MASTITIS; EXPRESSION
Research Fronts: 92-1091 005 (UROKINASE-TYPE PLASMINOGEN-ACTIVATOR; VASCULAR SMOOTH-MUSCLE CELLS; EFFECT OF BASIC FIBROBLAST GROWTH-FACTOR)
92-3056 001 (UPTAKE OF SURFACTANT PROTEIN-B; CASEIN KINASE-II; CATALYTIC SUBUNITS)

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3/9/4 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01582022 Genuine Article#: HJ748 Number of References: 56
Title: IDENTIFICATION OF A HUMAN LACTOFERRIN-BINDING PROTEIN IN STAPHYLOCOCCUS-AUREUS
Author(s): NAIDU AS; ANDERSSON M; FORSGREN A
Corporate Source: UNIV LUND,MALMO GEN HOSP,DEPT MED MICROBIOL/S-21401 MALMO//SWEDEN/
Journal: JOURNAL OF MEDICAL MICROBIOLOGY, 1992, V36, N3 (MAR), P177-183
Language: ENGLISH Document Type: ARTICLE
Geographic Location: SWEDEN
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: MICROBIOLOGY
Abstract: Human lactoferrin (HLf) is an iron-binding protein with antimicrobial activity that is present in high concentrations in milk and various exocrine secretions. HLf is also an acute-phase protein secreted by polymorphonuclear leucocytes, and its binding to a large number of clinical isolates of Staphylococcus aureus has been described recently from our laboratory. We have now characterised the HLf-staphylococcal interaction in S. aureus strain MAS-89. The binding of I-125-HLf to strain MAS-89 reached saturation in < 90 min and was maximal between pH 4 and 9. Unlabelled HLf displaced I-125-HLf binding. Various plasma and subepithelial matrix proteins, such as IgG,

fibrinogen, fibronectin, collagen and laminin, which are known to interact specifically with S. aureus, did not interfere with HLf binding. A Scatchard plot was non-linear; this implied a low affinity (1.55 x 10(7) L/mol) and a high affinity (2.70 x 10(8) L/mol) binding mechanism. We estimated that there were c. 5700 HLf binding sites/cell. The staphylococcal HLf-binding protein (HLf-BP) was partially susceptible to proteolytic enzymes or periodate treatment and was resistant to glycosidases. An active HLf-BP with an apparent M(r) of c. 450 Kda was isolated from strain MAS-89 cell lysate by ion-exchange chromatography on Q-sepharose. In SDS-PAGE, the reduced HLf-BP was resolved into two components of 67 and 62 Kda. The two components demonstrated a positive reaction with HLf-HRPO in a Western blot. These data establish that there is a specific receptor for HLf in S. aureus.

Identifiers--KeyWords Plus: SHOCK SYNDROME TOXIN-1; NEISSERIA-MENINGITIDIS; CELL-SURFACE; TRANSFERRIN; RECEPTORS; SEQUENCE; NEUTROPHILS; GONORRHOEAE; INVITRO; IRON

Research Fronts: 90-0022 001 (PORCINE SERUM TRANSFERRIN; IRON REMOVAL; N-TERMINAL LOBE)

90-2698 001 (IGG BINDING BACTERIAL PROTEIN; AFFINITY IMMOBILIZATION; ANTI-HLA ANTIBODIES; SURFACE OF STAPHYLOCOCCUS-AUREUS; RAPID DETECTION; CHEMILUMINESCENCE RESPONSE)

90-3110 001 (IDENTIFICATION OF FRAGMENTS; CORTICOSTEROIDS INCREASE LIPOCORTIN-I; RAS ADENYLATE-CYCLASE PATHWAY; HEAT-SHOCK PROTEIN HSP70 FAMILY)

90-3473 001 (TRANSFERRIN RECEPTOR EXPRESSION; IRON ACQUISITION; OUTER-MEMBRANE PROTEINS IN NEISSERIA-MENINGITIDIS; BACTERIAL VIRULENCE; VIBRIO-CHOLERAE NON-O1)

90-7332 001 (HUMAN NEUTROPHIL RESPIRATORY BURST OXIDASE; LEUKOCYTE ACTIVATION; MYELOMONOCYTIC CELLS)

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3/9/5 (Item 1 from file: 71)
DIALOG(R)File 71:ELSEVIER BIOBASE

00115366 94104017
The plasminogen activation system in bovine milk: Differential localization of tissue-type plasminogen activator and urokinase in milk fractions is caused by binding to casein and urokinase receptor

Heegaard C.W.; Rasmussen L.K.; Andreasen P.A.
ADDRESS: C.W. Heegaard, Department of Molecular Biology, University of Arhus, C.F. Mollers Alle 130, 8000 Arhus C, Denmark
Journal: Biochimica et Biophysica Acta - Molecular Cell Research, 1222/1 (45-55), 1994, Netherlands
PUBLICATION DATE: 19940000
CODEN: BAMRD
ISSN: 0167-4889
DOCUMENT TYPE: Article
LANGUAGES: English SUMMARY LANGUAGES: English

We have analyzed the occurrence of components of the plasminogen activation system in bovine milk. Zymographic analyses showed that tissue-type plasminogen activator (t-PA) occurred in association with casein micelles, partially as a complex with type-1 plasminogen activator inhibitor (PAI-1), whereas urokinase-type plasminogen activator (u-PA) was confined to milk leukocytes. Whey contained a component with a plasminogen dependent proteolytic activity which was shown to be plasma prekallikrein (PPK). The U-PA in the milk leukocytes was shown to be bound to urokinase receptor (u-PAR). A purification to near-homogeneity of the bovine u-PAR was undertaken. Investigating the novel t-PA binding to casein micelles by ligand blotting and Sepharose immobilized casein, multimeric forms of kappa-casein and dimeric alpha(s2)-casein were identified as t-PA binding components. The kappa-casein gene and the fibrinogen gene are believed to have evolved from a common ancestor. Thus, the recent finding that casein enhances t-PA catalyzed plasminogen activation (Marcus, G., Hitt, S., Harvey, S.R. and Tritsch, G.L. (1993)

Fibrinolysis 7, 229-236), and the observed t-PA/casein binding suggests that the casein micelle, which also contains plasminogen, may serve as a matrix for t-PA-catalyzed plasminogen activation in milk.

DESCRIPTORS:
Urokinase; Tissue-type plasminogen activator; t-PA; Type-1 plasminogen inhibitor; Milk; Casein; Urokinase receptor; T-PA binding
? ds

Set Items Description
S1 156 FIBRINOGEN AND MILK
S2 0 S1 AND (CEX OR "CATION EXCHANGE")
S3 5 S1 AND SEPHAROSE?
? s s1 and cation and resin
156 S1
119310 CATION
61877 RESIN
S4 0 S1 AND CATION AND RESIN
? s s1 and ph
156 S1
596033 PH
S5 10 S1 AND PH
? type s5/full/all

5/9/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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08182312 BIOSIS NO.: 000094006085
IDENTIFICATION OF A HUMAN LACTOFERRIN-BINDING PROTEIN IN STAPHYLOCOCCUS-AUREUS
AUTHOR: NAIDU A S; ANDERSSON M; FORSGREN A
AUTHOR ADDRESS: DEP. MED. MICROBIOL., UNIV. LUND, MALMO GENERAL HOSP., S-214 01 MALMO, SWEDEN.
JOURNAL: J MED MICROBIOL 36 (3). 1992. 177-183. 1992
FULL JOURNAL NAME: Journal of Medical Microbiology
CODEN: JMMIA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Human lactoferrin (HLf) is an iron-binding protein with antimicrobial activity that is present in high concentrations in milk and various exocrine secretions. HLf is also an acute-phase protein secreted by polymorphonuclear leucocytes, and its binding to a large number of clinical isolates of Staphylococcus aureus has been described recently from our laboratory. We have now characterised the HLf-staphylococcal interactions in S. aureus strain MAS-89. The binding of 125I-HLf to strain MAS-89 reached saturation in < 90 min and was maximal between pH 4 and 9. Unlabelled HLf displaced 125I-HLF binding. Various plasma and subepithelial matrix protein, such as IgG, fibrinogen, fibronectin, collagen and laminin, which are known to interact specifically with S. aureus, did not interfere with HLf binding. A Scatchard plot was non-linear; this implied a low affinity (1.55 .times. 107 L/mol) and a high affinity (2.70 .times. 108 L/mol) binding mechanism. We estimated that there were c. 5700 HLf binding sites/cell. The staphylococcal HLf-binding protein (HLf-BP) was partially susceptible to proteolytic enzymes or periodate treatment and was resistant to glycosidases. An active HLf-BP with an apparent Mr of c. 450 Kda was isolated from strain MAS-89 cell lysate by ion-exchange chromatography on Q-sepharose. In SDS-PAGE, the reduced HLf-BP was resolved into two components of 67 and 62 Kda. The two components demonstrated a positive reaction with HLf-HRPO in a Western blot. These data establish that there

is a specific receptor for HLf in S. aureus.

CONCEPT CODES:
13012 Metabolism-Proteins, Peptides and Amino Acids
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
36002 Medical and Clinical Microbiology-Bacteriology
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
BIOSYSTEMATIC CODES:
07702 Micrococcaceae (1992-)
86215 Hominidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria
Eubacteria
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

5/9/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07904971 BIOSIS NO.: 000093004094
PARTIAL PURIFICATION AND CHARACTERIZATION OF NATIVE PLASMINOGEN ACTIVATORS FROM BOVINE MILK
AUTHOR: DEHARVENG G; NIELSEN S S
AUTHOR ADDRESS: DEP. FOOD SCI., PURDUE UNIV., WEST LAFAYETTE, INDIANA 47907.
JOURNAL: J DAIRY SCI 74 (7). 1991. 2060-2072. 1991
FULL JOURNAL NAME: Journal of Dairy Science
CODEN: JDSCA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: At least four native plasminogen activators were detected in bovine milk, and two partially purified plasminogen activators were characterized. The plasminogen activators were dissociated from casein proteins by treatments with sulfuric acid and dimethylformamide. The plasminogen activators in the resulting fractions were partially purified with size exclusion, affinity, or metal chelate chromatographic techniques. Molecular weights of the two partially purified plasminogen activators were 47.2 and 30.5 kDa by gel electrophoresis. Size exclusion chromatography gave a molecular weight of 43.2 kDa for the first plasminogen activator. The isoelectric points of the two plasminogen activators were in the pH range 6.2 to 6.7. Because activity was not enhanced by the presence of fibrinogen fragments in a plasminogen activator assay mixture and decreased when human anti-urokinase Ig were added, at least some bovine milk native plasminogen activators appear to be urokinase-type plasminogen activators.

DESCRIPTORS: DAIRY PRODUCT CASEIN PROTEIN PROTEOLYSIS ANTI-UROKINASE IMMUNOGLOBULIN
CONCEPT CODES:
10802 Enzymes-General and Comparative Studies; Coenzymes
13518 Food Technology-Dairy Products
13530 Food Technology-Evaluations of Physical and Chemical Properties

(1970-)
15002 Blood, Blood-Forming Organs and Body Fluids-Blood and Lymph Studies
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10504 Biophysics-General Biophysical Techniques

5/9/3 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

07625603 Genuine Article#: 189AR Number of References: 42
Title: Main differences in behavior and enterotoxin production of Staphylococcus aureus in two different raw milk cheeses
Author(s): Meyrand A (REPRINT) ; VernozyRozand C; Gonthier A; Mazuy C; RayGueniot S; Jaubert G; Perrin G; Lapeyre C; Richard Y
Corporate Source: ECOLE NATL VET LYON,UNITE MICROBIOL ALIMENTAIRE & PREVIS, BP 83/F-69280 MARCY LETOILE//FRANCE/ (REPRINT); INST TECH PROD LAITIERS CAPRINS,/F-17700 SURGERES//FRANCE/; STN REG PATHOL CAPRINE,/F-79012 NIORT//FRANCE/; CTR NATL ETUD VET & ALIMENTAIRES,LAB CENT HYG ALIMENTAIRE/F-75015 PARIS//FRANCE/
Journal: REVUE DE MEDECINE VETERINAIRE, 1999, V150, N3 (MAR), P271-278
ISSN: 0035-1555 Publication date: 19990300
Publisher: ECOLE NATIONAL VET TOULOUSE, 23 CHEMIN DES CAPELLES, 31076 TOULOUSE, FRANCE
Language: English Document Type: ARTICLE
Geographic Location: FRANCE
Subfile: CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences
Journal Subject Category: VETERINARY SCIENCES
Abstract: Differences in behavior and enterotoxin production of Staphylococcus aureus in two cheese types namely lactic and Camembert type cheeses have been evaluated. A Staphylococcus aureus strain producing staphylococcal enterotoxin A was added to raw goat's milk. The initial staphylococcal counts were respectively 4, 5 and 6 log cfu ml(-1). Cheeses were prepared following the industrial specifications and ripened for 42 d. Numbers of Staphylococcus nureus and aerobic plate count were determined respectively using Baird-Parker medium supplemented with rabbit plasma and bovine fibrinogen and 'Plate Count Agar (P.C.A.) during manufacture and ripening of cheeses. Physico-chemical analysis : pH, dry matter and chloride were also measured. Detection of the enterotoxins was done by the Vidas SET test (bioMerieux) and by an indirect double-sandwich ELISA technique using anti-enterotoxin monoclonal antibodies.

Aerobic mesophilic plate counts increased at a similar rate until the salting in both cheese types and remained stable and high during the ripening period. S. aureus counts declined markedly after draining and, by the end of ripening, they become zero in lactic cheeses. Conversely S. aureus counts increased until the salting and remained stable during ripening of Camembert type cheeses. The level of staphylococcal enterotoxin A recovered varied from 1 ng to 3.2 ng g(-1) in Camembert type cheeses made with an initial population of 10(4) to 10(6) cfu ml(-1) and from 1-2.5 ng g(-1) of cheese made with an initial population of 10(5) or 10(6) cfu ml(-1) in lactic cheeses. Staphylococcal standards should be replaced by enterotoxin detection in the regulations to assure the safety of raw milk cheeses.
Descriptors--Author Keywords: Staphylococcus aureus ; enterotoxin A ; lactic cheese ; Camembert type cheese
Identifiers--KeyWord Plus(R): GOATS MILK; SALMONELLA-TYPHIMURIUM; ESCHERICHIA-COLI; INJURY FORMATION; STORAGE PHASES; CHEDDAR CHEESE; GROWTH; MANUFACTURE; FATE; CULTURE

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5/9/4 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04901416 Genuine Article#: UQ490 Number of References: 40

Title: TIME AND TEMPERATURE ASPECTS OF BETA-LACTOGLOBULIN REMOVAL FROM METHYLATED SILICA SURFACES BY SODIUM DODECYL-SULFATE

Author(s): KARLSSON CAC; WAHLGREN MC; TRAGARDH AC
Corporate Source: LUND UNIV,DEPT FOOD TECHNOL/S-22100 LUND//SWEDEN/; LUND UNIV,DEPT FOOD ENGN/S-22100 LUND//SWEDEN/

Journal: COLLOIDS AND SURFACES B-BIOINTERFACES, 1996, V6, N4-5 (MAY 22), P 317-328
ISSN: 0927-7765
Language: ENGLISH Document Type: ARTICLE
Geographic Location: SWEDEN
Subfile: SciSearch
Journal Subject Category: BIOPHYSICS; BIOCHEMISTRY & MOLECULAR BIOLOGY

Abstract: The adsorption of beta-lactoglobulin onto methylated silica surfaces and the subsequent protein removal by the anionic surfactant sodium dodecyl sulphate (SDS) were followed using in-situ ellipsometry. Experiments were performed at pH 6.0 in phosphate-buffered saline solution. Parameters varied include temperature, length of time for protein adsorption from solution and surface residence time of beta-lactoglobulin. The temperature was kept constant throughout a trial, and the majority of experiments were carried out at a few degrees below the protein denaturation temperature as reported from differential scanning calorimetry studies. beta-Lactoglobulin adsorption at high temperatures resulted in aggregation at the surface after a lag phase of several minutes. Varying the protein adsorption time and thus the amount adsorbed while keeping the protein surface residence time fixed did not seem to affect the amount desorbed upon rinsing or the amount eluted by surfactant. For short beta-lactoglobulin adsorption times, the adsorbed amounts were comparable at all temperatures studied. The temperature hardly affected the amount desorbed during rinsing, but did however have a pronounced influence on the protein removed by surfactant. Up to around 60 degrees C practically all beta-lactoglobulin was eluted by the SDS. The fraction removed then decreased with temperature, with a sharp drop between 70 and 73 degrees C, and a further decline at higher levels. SDS was seen to be highly inefficient at removing beta-lactoglobulin adsorbed at temperatures above 70 degrees C. The trend observed is attributed to temperature-dependent changes in the protein resident on the surface. The beta-lactoglobulin surface residence time was seen to significantly affect the elutability. At short residence times the removal efficiency was comparably high, but decreased with time. However, no significant difference could be detected between two sufficiently long residence times. The behaviour is consistent with the assumption of multiple states of adsorbed proteins, together with slow conformational changes in the adsorbed protein layer.
Descriptors--Author Keywords: ADSORPTION ; ANIONIC SURFACTANT ; ELUTABILITY ; HYDROPHOBIC SURFACE ; BETA-LACTOGLOBULIN
Identifiers--KeyWords Plus: ADSORPTION BEHAVIOR; ADSORBED FIBRINOGEN; SOLID-SURFACES; SULFATE; ELLIPSOMETRY; PROTEINS; MILK; DENATURATION; ELUTABILITY; DETERGENT
Research Fronts: 94-0963 001 (PROTEIN ADSORPTION; HYDROPHILIC SILICA SURFACES; ADSORBED FIBRIN(OGEN))
94-1497 001 (CORRUGATED DIFFRACTION GRATINGS IN UNIAXIAL CRYSTALS; GENERAL TRANSVERSELY ISOTROPIC MEDIA; DIFFERENT MAGNETIC PERMEABILITIES; PLANAR BOUNDARIES)
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5/9/5 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02458967 Genuine Article#: LC310 Number of References: 37
Title: SELENIUM CONCENTRATIONS IN THE SERUM OF HEALTHY AND DISEASED CALVES
Author(s): STOCKER H; ZAHNER M; LUTZ H; FORRER R
Corporate Source: KLIN GEBURTSHILFE JUNGTIER & EUTERKRANKHEITEN AMBULATORIUM,WINTERTHURERSTR 260/CH-8057 ZURICH//SWITZERLAND/; VET MED KLIN/ZURICH//SWITZERLAND/
Journal: SCHWEIZER ARCHIV FUR TIERHEILKUNDE, 1993, V135, N4 (APR), P111-116
ISSN: 0036-7281
Language: GERMAN Document Type: ARTICLE
Geographic Location: SWITZERLAND
Subfile: SciSearch; CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences
Journal Subject Category: VETERINARY SCIENCES
Abstract: Between 1988 and 1990, selenium concentrations were measured in the serum of 188 calves admitted for various conditions to the University of Zurich veterinary hospital, and in 64 healthy calves that served as controls. The lowest mean concentration was measured in the controls and it was 14.5 mug/L. The mean concentrations in patients not previously supplemented with selenium for the three years were 29.1, 27.5 and 23.0 mug/L, respectively, and the concentrations in the patients after supplementation were 61.7, 88.7 and 72.6 mug/L, respectively. The differences between the two groups of patients, and between controls and calves of 1989 without selenium supplementation were statistically significant (P<0.05).

There were no significant differences between mean selenium concentrations of calves of different age groups or between calves of different disease groups. Selenium concentrations were not correlated with blood pH, plasma protein and fibrinogen concentrations. The low values measured in untreated calves paralleled results of previous studies in calves and cows in Switzerland.
Descriptors--Author Keywords: CALF ; TRACE ELEMENT ; SELENIUM ; DEFICIENCY
Identifiers--KeyWords Plus: DIETARY SELENIUM; BEEF-CATTLE; VITAMIN-E; COWS; MILK
Research Fronts: 91-3585 001 (SELF IN TOURISM; ENVIRONMENTAL PSYCHOLOGY;

EVOLUTION OF LAKE WINNIPEG RESORTS)
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5/9/6 (Item 4 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01582022 Genuine Article#: HJ748 Number of References: 56
Title: IDENTIFICATION OF A HUMAN LACTOFERRIN-BINDING PROTEIN IN STAPHYLOCOCCUS-AUREUS
Author(s): NAIDU AS; ANDERSSON M; FORSGREN A
Corporate Source: UNIV LUND,MALMO GEN HOSP,DEPT MED MICROBIOL/S-21401 MALMO//SWEDEN/
Journal: JOURNAL OF MEDICAL MICROBIOLOGY, 1992, V36, N3 (MAR), P177-183
Language: ENGLISH Document Type: ARTICLE
Geographic Location: SWEDEN
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: MICROBIOLOGY
Abstract: Human lactoferrin (HLf) is an iron-binding protein with antimicrobial activity that is present in high concentrations in milk and various exocrine secretions. HLf is also an acute-phase protein secreted by polymorphonuclear leucocytes, and its binding to a large number of clinical isolates of Staphylococcus aureus has been described recently from our laboratory. We have now characterised the

HLf-staphylococcal interaction in S. aureus strain MAS-89. The binding of I-125-HLf to strain MAS-89 reached saturation in < 90 min and was maximal between pH 4 and 9. Unlabelled HLf displaced I-125-HLf binding. Various plasma and subepithelial matrix proteins, such as IgG, fibrinogen, fibronectin, collagen and laminin, which are known to interact specifically with S. aureus, did not interfere with HLf binding. A Scatchard plot was non-linear; this implied a low affinity (1.55 x 10(7) L/mol) and a high affinity (2.70 x 10(8) L/mol) binding mechanism. We estimated that there were c. 5700 HLf binding sites/cell. The staphylococcal HLf-binding protein (HLf-BP) was partially susceptible to proteolytic enzymes or periodate treatment and was resistant to glycosidases. An active HLf-BP with an apparent M(r) of c. 450 Kda was isolated from strain MAS-89 cell lysate by ion-exchange chromatography on Q-sepharose. In SDS-PAGE, the reduced HLf-BP was resolved into two components of 67 and 62 Kda. The two components demonstrated a positive reaction with HLf-HRPO in a Western blot. These data establish that there is a specific receptor for HLf in S. aureus.

Identifiers--KeyWords Plus: SHOCK SYNDROME TOXIN-1; NEISSERIA-MENINGITIDIS; CELL-SURFACE; TRANSFERRIN; RECEPTORS; SEQUENCE; NEUTROPHILS; GONORRHOEAE; INVITRO; IRON

Research Fronts: 90-0022 001 (PORCINE SERUM TRANSFERRIN; IRON REMOVAL; N-TERMINAL LOBE)

90-2698 001 (IGG BINDING BACTERIAL PROTEIN; AFFINITY IMMOBILIZATION; ANTI-HLA ANTIBODIES; SURFACE OF STAPHYLOCOCCUS-AUREUS; RAPID DETECTION; CHEMILUMINESCENCE RESPONSE)

90-3110 001 (IDENTIFICATION OF FRAGMENTS; CORTICOSTEROIDS INCREASE LIPOCORTIN-I; RAS ADENYLATE-CYCLASE PATHWAY; HEAT-SHOCK PROTEIN HSP70 FAMILY)

90-3473 001 (TRANSFERRIN RECEPTOR EXPRESSION; IRON ACQUISITION; OUTER-MEMBRANE PROTEINS IN NEISSERIA-MENINGITIDIS; BACTERIAL VIRULENCE; VIBRIO-CHOLERAE NON-O1)

90-7332 001 (HUMAN NEUTROPHIL RESPIRATORY BURST OXIDASE; LEUKOCYTE ACTIVATION; MYELOMONOCYTIC CELLS)

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5/9/7 (Item 5 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01451986 Genuine Article#: GZ650 Number of References: 66
Title: SPECIFIC BINDING OF LACTOFERIN TO ESCHERICHIA-COLI ISOLATED FROM HUMAN INTESTINAL INFECTIONS
Author(s): NAIDU SS; ERDEI J; CZIROK E; KALFAS S; GADO I; THOREN A; FORSGREN A; NAIDU AS
Corporate Source: UNIV LUND,MALMO GEN HOSP,DEPT MED MICROBIOL/S-21401 MALMO//SWEDEN/; UNIV LUND,MALMO GEN HOSP,DEPT INFECT DIS/S-21401 MALMO//SWEDEN/; UNIV LUND,SCH DENT/S-21401 MALMO//SWEDEN/; NATL INST HYG/BUDAPEST//HUNGARY/
Journal: APMIS, 1991, V99, N12 (DEC), P1142-1150
Language: ENGLISH Document Type: ARTICLE
Geographic Location: SWEDEN; HUNGARY
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: PATHOLOGY; MICROBIOLOGY; IMMUNOLOGY
Abstract: The degrees of human lactoferrin (HLf) and bovine lactoferrin (BLf) binding in 169 Escherichia coli strains isolated from human intestinal infections, and in an additional 68 strains isolated from healthy individuals, were examined in a I-125-labelled protein binding assay. The binding was expressed as a percentage calculated from the total labelled ligand added to bacteria. The HLf and BLf binding to E. coli was in the range 3.7 to 73.4% and 4.8 to 61.6%, respectively. Enterotoxigenic strains demonstrated a significantly higher HLf binding (median = 19%) than enteropathogenic, enteroinvasive, enterohaemorrhagic strains or normal intestinal E. coli isolates (medians 6 to 9). Enteropathogenic strains belonging to serotypes O44 and O127 demonstrated significantly higher HLf binding compared to O26, O55, O111, O119 and O126. No significant differences in the degree of HLf or BLf binding were found between aerobactin-producing and

non-producing strains. The interaction was further characterized in a high Lf-binding EPEC strain, E34663 (serotype O127). The binding was stable in the pH range 4.0 to 7.5, did not dissociate in the presence of 2M NaCl or 2M urea, and reached saturation within two h. Unlabelled HLf and BLf displaced the I-125-HLf binding to E34663 in a dose-dependent manner. Apo- and iron-saturated forms of Lf demonstrated similar binding to E34663. Among various unlabelled subepithelial matrix proteins and carbohydrates tested (in 10(4)-fold excess) only fibronectin and fibrinogen caused a moderate inhibition of I-125-HLf binding. According to Scatchard plot analysis, 5,400 HLf-binding sites/cell, with an affinity constant (K(a)) of 1.4 x 10(-7) M, were estimated in strain E34663. These data establish the presence of a specific Lf-binding mechanism in E. coli.

Descriptors--Author Keywords: LACTOFERRIN; ESCHERICHIA-COLI; SPECIFIC BINDING; GASTROENTERITIS

Identifiers--KeyWords Plus: NEUTROPHILIC POLYMORPHONUCLEAR LEUKOCYTES; HYDROXAMATE SIDEROPHORE AEROBACTIN; HUMAN-MILK; NEISSERIA-MENINGITIDIS; HUMAN LACTOTRANSFERRIN; BOVINE LACTOFERRIN; IRON; TRANSFERRIN; PROTEINS; DIARRHEA

Research Fronts: 90-0022 001 (PORCINE SERUM TRANSFERRIN; IRON REMOVAL; N-TERMINAL LOBE)
90-1324 001 (ACUTE INFANTILE DIARRHEA; SALMONELLA INFECTIONS; ORAL REHYDRATION THERAPY)
90-3472 001 (LACTIC-ACID BACTERIA; MALNOURISHED CHILDREN; FERMENTED POWDERED MILK; LACTOSE IN YOGURT; INTESTINAL COLONIZATION; CULTURE OF LACTOBACILLUS-ACIDOPHILUS)
90-3473 001 (TRANSFERRIN RECEPTOR EXPRESSION; IRON ACQUISITION; OUTER-MEMBRANE PROTEINS IN NEISSERIA-MENINGITIDIS; BACTERIAL VIRULENCE; VIBRIO-CHOLERAE NON-O1)
90-5075 001 (PYELONEPHRITOGENIC ESCHERICHIA-COLI STRAINS; CLASSIC ENTEROPATHOGENIC SEROGROUP-O114; ACUTE DIARRHEA)

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5/9/8 (Item 6 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01445355 Genuine Article#: GZ696 Number of References: 29
Title: EXPRESSION AND CRYSTALLIZATION OF A SOLUBLE AND FUNCTIONAL FORM OF AN FC RECEPTOR RELATED TO CLASS-I HISTOCOMPATIBILITY MOLECULES
Author(s): GASTINEL LN; SIMISTER NE; BJORKMAN PJ
Corporate Source: CALTECH,DIV BIOL 15629/PASADENA//CA/91125; CALTECH,DIV BIOL 15629/PASADENA//CA/91125; CALTECH,HOWARD HUGHES MED INST/PASADENA//CA/91125; BRANDEIS UNIV,ROSENSTIEL BASIC MED SCI RES CTR/WALTHAM//MA/02254; BRANDEIS UNIV,DEPT BIOL/WALTHAM//MA/02254
Journal: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 1992, V89, N2 (JAN 15), P638-642
Language: ENGLISH Document Type: ARTICLE
Geographic Location: USA
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: MULTIDISCIPLINARY SCIENCES
Abstract: Maternal transport of immunoglobulin to the newborn mammal is important for immune defense during the first weeks of independent life. Receptors for the Fc portion of IgG mediate the transfer of immunoglobulin from milk to the bloodstream of newborn mice and rats, by passage through intestinal epithelial cells. Neonatal Fc receptors (FcRn) isolated from intestinal epithelial cells of suckling

rats bear a striking resemblance to class I histocompatibility molecules. The heavy chain of FcRn has sequence similarity in three extracellular domains to the corresponding domains of class I molecules, and the light chain of both types of molecules is beta-2-microglobulin. To facilitate biochemical characterization and crystallization of FcRn, we have expressed a secreted form, as well as two different lipid-linked forms solubilizable by phospholipase treatment. The lipid-linked forms are heterodimers consisting of beta-2-microglobulin and the extracellular portion of the heavy chain and are anchored to the membrane by a phosphatidylinositol linkage attached to either the heavy chain or beta-2-microglobulin. Cells expressing either lipid-linked form bind rat Fc, reproducing the known physiological pH dependence of binding. Secreted FcRn has been purified in yields up to 40 mg/liter from cell supernatants. Circular dichroism spectra of soluble FcRn appear similar to spectra of class I MHC molecules, suggesting that the similarities in primary sequence extend also to a similarity in secondary structure. Soluble FcRn crystallizes in a form amenable to a structure determination by x-ray diffraction methods, which will ultimately allow a detailed comparison of the two types of molecules.

Descriptors--Author Keywords: IMMUNOGLOBULIN RECEPTOR; PROTEIN ENGINEERING; AMPLIFIABLE EXPRESSION SYSTEM; CIRCULAR DICHROISM
Identifiers--KeyWords Plus: AMINO-ACID-SEQUENCE; HLA-B-ANTIGENS; HEAVY-CHAIN; BETA-2-MICROGLOBULIN; EFFICIENT; INVITRO; PEPTIDE; SIGNAL; CELLS
Research Fronts: 90-1517 003 (T-CELL RECEPTOR; CLASS-I MOLECULES; PEPTIDE COMPETITION FOR ANTIGEN PRESENTATION; MALARIA VACCINE DESIGN)
90-0293 001 (POLYACRYLAMIDE GELS FOR PROTEIN SEQUENCING; POLYVINYLIDENE DIFLUORIDE MEMBRANES; GENE CLONING STRATEGIES)
90-3974 001 (CIRCULAR-DICHROISM SPECTROSCOPY; HELIX STABILITY; STRUCTURAL TRANSITION; SIGNAL PEPTIDES; CONFORMATIONAL-CHANGES IN HUMAN FIBRINOGEN)

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5/9/9 (Item 7 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01116508 Genuine Article#: FX645 Number of References: 37
Title: PARTIAL-PURIFICATION AND CHARACTERIZATION OF NATIVE PLASMINOGEN ACTIVATORS FROM BOVINE-MILK
Author(s): DEHARVENG G; NIELSEN SS
Corporate Source: PURDUE UNIV,DEPT FOOD SCI/W LAFAYETTE//IN/47907
Journal: JOURNAL OF DAIRY SCIENCE, 1991, V74, N7, P2060-2072
Language: ENGLISH Document Type: ARTICLE
Geographic Location: USA
Subfile: SciSearch; CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences
Journal Subject Category: FOOD SCIENCE & TECHNOLOGY; AGRICULTURE, DAIRY & ANIMAL SCIENCE
Abstract: At least four native plasminogen activators were detected in bovine milk, and two partially purified plasminogen activators were characterized. The plasminogen activators were dissociated from casein proteins by treatments with sulfuric acid and dimethylformamide. The plasminogen activators in the resulting fractions were partially purified with size exclusion, affinity, or metal chelate chromatographic techniques. Molecular weights of the two partially purified plasminogen activators were 47.2 and 30.5 kDa by gel electrophoresis. Size exclusion chromatography gave a molecular weight of 43.2 kDa for the first plasminogen activator. The isoelectric points of the two plasminogen activators were in the pH range 6.2 to 6.7. Because activity was not enhanced by the presence of fibrinogen fragments in a plasminogen activator assay mixture and decreased when human anti-urokinase Ig were added, at least some bovine milk native plasminogen activators appear to be urokinase-type plasminogen activators.
Descriptors--Author Keywords: PLASMINOGEN ACTIVATOR; PLASMIN; PLASMINOGEN; BOVINE MILK
Identifiers--KeyWords Plus: POLYACRYLAMIDE GELS; ELECTROPHORETIC ANALYSIS; TISSUE; IDENTIFICATION; PROTEINASES; CASEIN; CELLS
Research Fronts: 89-2363 004 (PLASMINOGEN-ACTIVATOR INHIBITOR; ROLE OF VASCULAR ENDOTHELIAL-CELLS; ABNORMAL FIBRINOLYSIS IN HEALTHY MALE CIGARETTE SMOKERS)
89-3034 002 (MICROTUBULE CROSS-LINKING PROTEIN; SMALL SYNAPTIC VESICLES OF RAT-BRAIN; AXOLININ LOCALIZATION)
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5/9/10 (Item 1 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

00394610
Partial purification and characterization of native plasminogen activators from bovine milk.
Deharveng G; Nielsen S S
DEP. FOOD SCI., PURDUE UNIV., WEST LAFAYETTE, INDIANA 47907.
Journal of Dairy Science Vol.74, No.7, p.2060-2072, 1991.
ISSN: 0022-0302
DOCUMENT TYPE: Article
LANGUAGE: English RECORD TYPE: Abstract

ABSTRACT: At least four native plasminogen activators were detected in bovine milk, and two partially purified plasminogen activators were characterized. The plasminogen activators were dissociated from casein proteins by treatments with sulfuric acid and dimethylformamide. The plasminogen activators in the resulting fractions were partially purified with size exclusion, affinity, or metal chelate chromatographic techniques. Molecular weights of the two partially purified plasminogen activators were 47.2 and 30.5 kDa by gel electrophoresis. Size exclusion chromatography gave a molecular weight of 43.2 kDa for the first plasminogen activator. The isoelectric points of the two plasminogen activators were in the pH range 6.2 to 6.7. Because activity was not enhanced by the presence of fibrinogen fragments in a plasminogen activator assay mixture and decreased when human anti-urokinase Ig were added, at least some bovine milk native plasminogen activators appear to be urokinase-type plasminogen activators.

DESCRIPTORS: DAIRY PRODUCT; CASEIN PROTEIN; PROTEOLYSIS; ANTI-UROKINASE IMMUNOGLOBULIN
SUBJECT CODES & NAMES: 04625 -- ENZYMES; 15100 -- BLOOD & RELATED TOPICS; 40400 -- CHEMICAL & PHYSICAL PROPERTIES OF FOODS; 40500 -- DAIRY PRODUCTS

FILE SEGMENT: NONUNIQUE
? ds

Set	Items	Description
S1	156	FIBRINOGEN AND MILK
S2	0	S1 AND (CEX OR "CATION EXCHANGE")

S3 5 S1 AND SEPHAROSE?
S4 0 S1 AND CATION AND RESIN
S5 10 S1 AND PH
? s s1 and cation?
156 S1
246835 CATION?
S6 3 S1 AND CATION?
? type s6/full/all

6/9/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10003430 BIOSIS NO.: 199598458348
Role of the chymotrypsin-like membrane-associated proteinase from Treponema denticola ATCC 35405 in inactivation of bioactive peptides.
AUTHOR: Makinen Pirkko-Liisa; Makinen Kauko K(a); Syed Salam A
AUTHOR ADDRESS: (a)Dep. Biol. Materials Sci., Sch. Dentistry, Univ. Michigan, Ann Arbor, MI 48109**USA
JOURNAL: Infection and Immunity 63 (9):p3567-3575 1995
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The ability of washed whole cells of Treponema denticola ATCC 35405 to hydrolyze (inactivate) substance P, bradykinin, and angiotensin I was studied. Substance P was attacked primarily at the Phe-8-Gly-9 bond by a chymotrypsin-like proteinase (CTLP), at Pro-4-Gln-5 by an endo-acting prolyl oligopeptidase (POPase), and at Gln-5-Gln-6 by an endopeptidase (FALGPA-peptidase). Bradykinin was cleaved at Phe-5-Ser-6 by the FALGPA-peptidase and at Pro-7-Phe-8 by the POPase. Angiotensin I was rapidly converted to angiotensin II by the CTLP, and both angiotensin I and angiotensin II were further hydrolyzed at Pro-7-Phe-8 by the POPase. All these enzymes were assumed to be cell associated and were easily extracted with a mild (0.05 to 0.1%) Triton X-100 treatment. Because it was conceivable that the hydrolysis of substance P at the Phe-8-Gly-9 bond was catalyzed by a CTLP described earlier (V.-J. Uitto, D. Grenier, E. C. S. Chan, and B. C. McBride, Infect. Immun. 56:2717-2722, 1988), the enzyme was purified to homogeneity by means of conventional fast protein liquid chromatography procedures. For kinetic studies, Phe-8(4-nitro)-substance P (NSP) (absorption maximum at 309.2 nm, epsilon = 545 M-1 cm-1) was synthesized to replace substance P as a substrate in kinetic studies. In reversed-phase chromatography, both NSP and substance P gave identical results with both whole cells and the purified enzyme. The CTLP has a mass of 95 kDa, and its activity is suggested to be based on an active seryl residue, on an active imidazole group, and on an active carboxyl group but not on metal cations. The enzyme hydrolyzes N-succinyl-L-Ala-L-Ala-L-Pro-L-Phe-p-nitroaniline (SAAPFNA, a typical chymotrypsin substrate) at a high rate and several proteins, such as calf thymus histone, human plasma fibrinogen, milk caseins, and gelatin. Among the substrates tested, substance P showed the highest affinity (K-m = 0.22 mM) for the purified enzyme. Depending on conditions, clinically applicable chlorhexidine levels (3.2 mmol/liter, or 0.2%) strongly activated (up to fourfold) the hydrolysis of SAAPFNA by whole cells and the purified CTLP. The hydrolysis of NSP by whole cells and purified CTLP was slightly inhibited by chlorhexidine. The results demonstrated the versatility and the effectiveness of the outer membrane of T. denticola in occasioning a rapid breakdown and inactivation of human bioactive peptides and other peptidolytic catalyses. The tests with whole cells resulted in the accumulation of short peptides derived from substance P, bradykinin, and the

angiotensins, the resistance of which to further hydrolysis by whole cells deserves additional studies.

REGISTRY NUMBERS: 9004-07-3: CHYMOTRYPSIN; 9001-92-7: PROTEINASE; 33507-63-0: SUBSTANCE P; 1407-47-2: ANGIOTENSIN; 58-82-2: BRADYKININ
DESCRIPTORS:
MAJOR CONCEPTS: Cardiovascular System (Transport and Circulation); Endocrine System (Chemical Coordination and Homeostasis); Enzymology (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Infection; Membranes (Cell Biology); Nervous System (Neural Coordination); Physiology
BIOSYSTEMATIC NAMES: Spirochaetaceae--Eubacteria, Bacteria
ORGANISMS: Treponema denticola (Spirochaetaceae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria; microorganisms
CHEMICALS & BIOCHEMICALS: CHYMOTRYPSIN; PROTEINASE; SUBSTANCE P; ANGIOTENSIN; BRADYKININ
MISCELLANEOUS TERMS: ANGIOTENSIN; BRADYKININ; SUBSTANCE P
CONCEPT CODES:
10508 Biophysics-Membrane Phenomena
10808 Enzymes-Physiological Studies
14504 Cardiovascular System-Physiology and Biochemistry
17002 Endocrine System-General
17020 Endocrine System-Neuroendocrinology (1972-)
20504 Nervous System-Physiology and Biochemistry
31000 Physiology and Biochemistry of Bacteria
34504 Immunology and Immunochemistry-Bacterial, Viral and Fungal
36002 Medical and Clinical Microbiology-Bacteriology
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
BIOSYSTEMATIC CODES:
06112 Spirochaetaceae (1992-)

6/9/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04242312 Genuine Article#: RQ792 Number of References: 39
Title: ROLE OF THE CHYMOTRYPSIN-LIKE MEMBRANE-ASSOCIATED PROTEINASE FROM TREPONEMA-DENTICOLA ATCC-35405 IN INACTIVATION OF BIOACTIVE PEPTIDES
Author(s): MAKINEN PL; MAKINEN KK; SYED SA
Corporate Source: UNIV MICHIGAN,SCH DENT,DEPT BIOL & MAT SCI/ANN ARBOR//MI/48109; UNIV MICHIGAN,SCH DENT,DEPT BIOL & MAT SCI/ANN ARBOR//MI/48109
Journal: INFECTION AND IMMUNITY, 1995, V63, N9 (SEP), P3567-3575
ISSN: 0019-9567
Language: ENGLISH Document Type: ARTICLE
Geographic Location: USA
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: IMMUNOLOGY; INFECTIOUS DISEASES
Abstract: The ability of washed whole cells of Treponema denticola ATCC 35405 to hydrolyze (inactivate) substance P, bradykinin, and angiotensin I was studied, Substance P was attacked primarily at the Phe-8-Gly-9 bond by a chymotrypsin-like proteinase (CTLP), at Pro-4-Gln-5 by an endo-acting prolyl oligopeptidase (POPase), and at Gln-5-Gln-6 by an endopeptidase (FALGPA-peptidase). Bradykinin was cleaved at Phe-5-Ser-6 by the FALGPA-peptidase and at Pro-7-Phe-8 by the POPase, Angiotensin I,vas rapidly converted to angiotensin II by the CTLP, and both angiotensin I and angiotensin II were further hydrolyzed at Pro-7-Phe-8 by the POPase, All these enzymes were assumed to be cell associated and were easily extracted with a mild (0.05 to 0.1%) Triton X-100 treatment, Because it was conceivable that the

hydrolysis of substance P at the Phe-8-Gly-9 bond was catalyzed by a CTLP described earlier (V,-J, Uitto, D. Grenier, E. C, S. Chan, and B; C, McBride, Infect. Immun, 56:2717-2722, 1988), the enzyme was purified to homogeneity by means of conventional fast protein liquid chromatography procedures, For kinetic studies, Phe-8 (4-nitro)-substance P (NSP) (absorption maximum at 309.2 nm, epsilon = 545 M-l cm-l) was synthesized to replace substance P as a substrate in kinetic studies. In reversed-phase chromatography, both NSP and substance P gave identical results with both whole cells and the purified enzyme, The CTLP has a mass of 95 kDa, and its activity is suggested to be based on an active seryl residue, on an active imidazole group, and on an active carboxyl group but not on metal cations, The enzyme hydrolyzes N-succinyl-L-Ala-L-Ala-L-Pro-L-Phe-p-nitroaniline (SAAPFNA, a typical chymotrypsin substrate) at a high rate and: several proteins, such as calf thymus histone, human plasma fibrinogen, milk caseins, and gelatin, Among the substrates tested, substance P showed the highest affinity (K-m = 0.22 mM) for the purified enzyme, Depending on conditions, clinically applicable chlorhexidine levels (3.2 mmol/liter, or 0.2%) strongly activated (up to fourfold) the hydrolysis of SAAPFNA by whole cells and the purified CTLP. The hydrolysis of NSP by whole cells and purified CTLP was slightly inhibited by chlorhexidine. The results demonstrated the versatility and the effectiveness of the outer membrane of T. denticola in occasioning a rapid breakdown and inactivation of human bioactive peptides and other peptidolytic catalyses, The tests with whole cells resulted in the accumulation of short peptides derived from substance P, bradykinin, and the angiotensins, the resistance of which to further hydrolysis by whole cells deserves additional studies.

Identifiers--KeyWords Plus: HUMAN-LEUKOCYTE ELASTASE; SUBSTANCE-P RECEPTOR; OXIDIZED-B-CHAIN; CATHEPSIN-G; PROTEASE ACTIVITY; REACTIVE SITE; CHLORHEXIDINE; INHIBITOR; ENZYME; N-ETHOXYCARBONYL-2-ETHOXY-1,2-DIHYDROQUINOLINE
Research Fronts: 93-0247 001 (GINGIVAL CREVICULAR FLUID; DESTRUCTIVE PERIODONTAL-DISEASE; PLAQUE REMOVAL; INTERDENTAL GINGIVITIS; CHLORHEXIDINE TOOTHPASTE; ORAL HEALTH)
93-2003 001 (NEUTROPHIL ELASTASE; ISOLATION OF SERINE PROTEASES; CATHEPSIN-G ACTIVATES PLATELETS)

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6/9/3 (Item 1 from file: 71)
DIALOG(R)File 71:ELSEVIER BIOBASE

00300870 95121129
Role of the chymotrypsin-like membrane-associated proteinase from Treponema denticola ATCC 35405 in inactivation of bioactive peptides
Makinen P.-L.; Makinen K.K.; Syed S.A.
ADDRESS: K.K. Makinen, Dept. of Biologic/Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, MI 48109, United States
Journal: Infection and Immunity, 63/9 (3567-3575), 1995, United States
PUBLICATION DATE: 19950000
CODEN: INFIB
ISSN: 0019-9567
DOCUMENT TYPE: Article
LANGUAGES: English SUMMARY LANGUAGES: English

The ability of washed whole cells of Treponema denticola ATCC 35405 to hydrolyze (inactivate) substance P, bradykinin, and angiotensin I was studied. Substance P was attacked primarily at the Phe-8-Gly-9 bond by a chymotrypsin-like proteinase (CTLP), at Pro-4-Gln-5 by an endo-acting prolyl oligopeptidase (POPase), and at Gln-5-Gln-6 by an endopeptidase (FALGPA- peptidase). Bradykinin was cleaved at Phe-5-Ser-6 by the FALGPA-peptidase and at Pro-7-Phe-8 by the POPase. Angiotensin I was rapidly converted to angiotensin II by the CTLP, and both angiotensin I and angiotensin II were further hydrolyzed at Pro-7-Phe-8 by the POPase. All these enzymes were assumed to be cell associated and were easily extracted with a mild (0.05 to 0.1%) Triton X-100 treatment. Because it was conceivable that the hydrolysis of substance P at the Phe-8-Gly-9 bond was catalyzed by a CTLP described earlier (V.-J. Uitto, D. Grenier, E. C. S. Chan, and B.C. McBride, Infect. Immun. 56:2717-2722, 1988), the enzyme was purified to homogeneity by means of conventional fast protein liquid chromatography procedures. For kinetic studies, Phe-8(4-nitro)-substance P (NSP) (absorption maximum at 309.2 nm, epsilon = 545 Msup -sup 1 cmsup -sup 1) was synthesized to replace substance P as a substrate in kinetic studies. In reversed-phase chromatography, both NSP and substance P gave identical results with both whole cells and the purified enzyme. The CTLP has a mass of 95 kDa, and its activity is suggested to be based on an active seryl residue, on an active imidazole group, and on an active carboxyl group but not on metal cations. The enzyme hydrolyzes N-succinyl-L-Ala-L- Ala-L-Pro-L-Phe-p-nitroaniline (SAAPFNA, a typical chymotrypsin substrate) at a high rate and several proteins, such as calf thymus histone, human plasma fibrinogen, milk caseins, and

gelatin. Among the substrates tested, substance P showed the highest affinity (K(m) = 0.22 mM) for the purified enzyme. Depending on conditions, clinically applicable chlorhexidine levels (3.2 mmol/liter, or 0.2%) strongly activated (up to fourfold) the hydrolysis of SAAPFNA by whole cells and the purified CTLP. The hydrolysis of NSP by whole cells and purified CTLP was slightly inhibited by chlorhexidine. The results demonstrated the versatility and the effectiveness of the outer membrane of T. denticola in occasioning a rapid breakdown and inactivation of human bioactive peptides and other peptidolytic catalyses. The tests with whole cells resulted in the accumulation of short peptides derived from substance P, bradykinin, and the angiotensins, the resistance of which to further hydrolysis by whole cells deserves additional studies.

CLASSIFICATION CODE AND DESCRIPTION:
86.7.3.13 - IMMUNOLOGY AND INFECTIOUS DISEASES / IMMUNITY TO INFECTION / Medical and Veterinary Bacteriology / Tooth decay, gum disease and oral bacteriology

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? ds

Set     Items   Description
S1        156   FIBRINOGEN AND MILK
S2          0   S1 AND (CEX OR "CATION EXCHANGE")
S3          5   S1 AND SEPHAROSE?
S4          0   S1 AND CATION AND RESIN
S5         10   S1 AND PH
S6          3   S1 AND CATION?
? s s-sepharose? or sp-sepharose? or fractogel? or sepharose?
          35  S-SEPHAROSE?
          34  SP-SEPHAROSE?
         517  FRACTOGEL?
       38626  SEPHAROSE?
    S7 39043  S-SEPHAROSE? OR SP-SEPHAROSE? OR FRACTOGEL? OR SEPHAROSE?
? s s1 and s7
         156  S1
       39043  S7
    S8     5  S1 AND S7
? type s8/full/all

 8/9/1     (Item 1 from file: 5)
DIALOG(R)File   5:Biosis Previews(R)
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09326668   BIOSIS NO.: 199497335038
The plasminogen activation system in bovine milk: Differential
 localization of tissue-type plasminogen activator and urokinase in
 milk fractions is caused by binding to casein and urokinase
 receptor.
AUTHOR: Heegaard Christian W(a); Rasmussen Lone K; Andreasen Peter A
AUTHOR ADDRESS: (a)Dep. Molecular Biol., Univ. Arhus, C.F. Mollers Alle
 130, 8000 Arhus C**Denmark
JOURNAL: Biochimica et Biophysica Acta  1222 (1):p45-55 1994
ISSN: 0006-3002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have analyzed the occurrence of components of the plasminogen
 activation system in bovine milk. Zymographic analyses showed that
 tissue-type plasminogen activator (t-PA) occurred in association with
 casein micelles, partially as a complex with type-1 plasminogen activator
 inhibitor (PAI-1), whereas urokinase-type plasminogen activator (u-PA)
 was confined to milk leukocytes. Whey contained a component with a
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plasminogen dependent proteolytic activity which was shown to be plasma prekallikrein (PPK). The u-PA in the milk leukocytes was shown to be bound to urokinase receptor (u-PAR). A purification to near-homogeneity of the bovine u-PAR was undertaken. Investigating the novel t-PA binding to casein micelles by ligand blotting and Sepharose immobilized casein, multimeric forms Of K-casein and dimeric alpha-s2-casein were identified as t-PA binding components. The kappa-casein gene and the fibrinogen gene are believed to have evolved from a common ancestor. Thus, the recent finding that casein enhances t-PA catalyzed plasminogen activation (Marcus, G., Hitt, S., Harvey, S.R. and Tritsch. G.L. (1993) Fibrinolysis 7, 229-236), and the observed t-PA/-casein binding suggests that the casein micelle, which also contains plasminogen, may serve as a matrix for t-PA-catalyzed plasminogen activation in milk

REGISTRY NUMBERS: 9039-53-6: UROKINASE; 9055-02-1: PREKALLIKREIN
DESCRIPTORS:
MAJOR CONCEPTS: Enzymology (Biochemistry and Molecular Biophysics); Membranes (Cell Biology); Reproductive System (Reproduction)
BIOSYSTEMATIC NAMES: Bovidae--Artiodactyla, Mammalia, Vertebrata, Chordata, Animalia
ORGANISMS: Bovidae (Bovidae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals; artiodactyls; chordates; mammals; nonhuman vertebrates; nonhuman mammals; vertebrates
CHEMICALS & BIOCHEMICALS: UROKINASE; PREKALLIKREIN
MISCELLANEOUS TERMS: BASEMENT MEMBRANE; EXTRACELLULAR MATRIX; MAMMARY GLAND; PLASMA PREKALLIKREIN
CONCEPT CODES:
10508 Biophysics-Membrane Phenomena
10808 Enzymes-Physiological Studies
16504 Reproductive System-Physiology and Biochemistry
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
BIOSYSTEMATIC CODES:
85715 Bovidae

8/9/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08182312 BIOSIS NO.: 000094006085
IDENTIFICATION OF A HUMAN LACTOFERRIN-BINDING PROTEIN IN STAPHYLOCOCCUS-AUREUS
AUTHOR: NAIDU A S; ANDERSSON M; FORSGREN A
AUTHOR ADDRESS: DEP. MED. MICROBIOL., UNIV. LUND, MALMO GENERAL HOSP., S-214 01 MALMO, SWEDEN.
JOURNAL: J MED MICROBIOL 36 (3). 1992. 177-183. 1992
FULL JOURNAL NAME: Journal of Medical Microbiology
CODEN: JMMIA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Human lactoferrin (HLf) is an iron-binding protein with antimicrobial activity that is present in high concentrations in milk and various exocrine secretions. HLf is also an acute-phase protein secreted by polymorphonuclear leucocytes, and its binding to a large number of clinical isolates of Staphylococcus aureus has been described recently from our laboratory. We have now characterised the HLf-staphylococcal interactions in S. aureus strain MAS-89. The binding of 125I-HLf to strain MAS-89 reached saturation in < 90 min and was maximal between pH 4 and 9. Unlabelled HLf displaced 125I-HLF binding. Various plasma and subepithelial matrix protein, such as IgG,

fibrinogen, fibronectin, collagen and laminin, which are known to interact specifically with S. aureus, did not interfere with HLf binding. A Scatchard plot was non-linear; this implied a low affinity (1.55 .times. 107 L/mol) and a high affinity (2.70 .times. 108 L/mol) binding mechanism. We estimated that there were c. 5700 HLf binding sites/cell. The staphylococcal HLf-binding protein (HLf-BP) was partially susceptible to proteolytic enzymes or periodate treatment and was resistant to glycosidases. An active HLf-BP with an apparent Mr of c. 450 Kda was isolated from strain MAS-89 cell lysate by ion-exchange chromatography on Q-sepharose. In SDS-PAGE, the reduced HLf-BP was resolved into two components of 67 and 62 Kda. The two components demonstrated a positive reaction with HLf-HRPO in a Western blot. These data establish that there is a specific receptor for HLf in S. aureus.

CONCEPT CODES:
13012 Metabolism-Proteins, Peptides and Amino Acids
30500 Morphology and Cytology of Bacteria
31000 Physiology and Biochemistry of Bacteria
36002 Medical and Clinical Microbiology-Bacteriology
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
BIOSYSTEMATIC CODES:
07702 Micrococcaceae (1992-)
86215 Hominidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Bacteria
Eubacteria
Animals
Chordates
Vertebrates
Mammals
Primates
Humans

8/9/3 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03231715 Genuine Article#: NP340 Number of References: 67
Title: THE PLASMINOGEN ACTIVATION SYSTEM IN BOVINE-MILK - DIFFERENTIAL LOCALIZATION OF TISSUE-TYPE PLASMINOGEN-ACTIVATOR AND UROKINASE IN MILK FRACTIONS IS CAUSED BY BINDING TO CASEIN AND UROKINASE RECEPTOR
Author(s): HEEGAARD CW; RASMUSSEN LK; ANDREASEN PA
Corporate Source: AARHUS UNIV,DEPT MOLEC BIOL,CF MOLLERS 130/DK-8000 AARHUS//DENMARK/
Journal: BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR CELL RESEARCH, 1994, V1222 , N1 (MAY 26), P45-55
ISSN: 0167-4889
Language: ENGLISH Document Type: ARTICLE
Geographic Location: DENMARK
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: BIOCHEMISTRY & MOLECULAR BIOLOGY; BIOPHYSICS
Abstract: We have analyzed the occurrence of components of the plasminogen activation system in bovine milk. Zymographic analyses showed that tissue-type plasminogen activator (t-PA) occurred in association with casein micelles, partially as a complex with type-1 plasminogen activator inhibitor (PAI-1), whereas urokinase-type plasminogen activator (u-PA) was confined to milk leukocytes. Whey contained a component with a plasminogen dependent proteolytic activity which was shown to be plasma prekallikrein (PPK). The u-PA in the milk

leukocytes was shown to be bound to urokinase receptor (u-PAR). A purification to near-homogeneity of the bovine u-PAR was undertaken. Investigating the novel t-PA binding to casein micelles by ligand blotting and Sepharose immobilized casein, multimeric forms of kappa-casein and dimeric alpha(s2)-casein were identified as t-PA binding components. The kappa-casein gene and the fibrinogen gene are believed to have evolved from a common ancestor. Thus, the recent finding that casein enhances t-PA catalyzed plasminogen activation (Marcus, G., Hitt, S., Harvey, S.R. and Tritsch, G.L. (1993) Fibrinolysis 7, 229-236), and the observed t-PA/casein binding suggests that the casein micelle, which also contains plasminogen, may serve as a matrix for t-PA-catalyzed plasminogen activation in milk.

Descriptors--Author Keywords: UROKINASE ; TISSUE-TYPE PLASMINOGEN ACTIVATOR, T-PA ; TYPE-1 PLASMINOGEN INHIBITOR ; MILK ; CASEIN ; UROKINASE RECEPTOR ; T-PA BINDING

Identifiers--KeyWords Plus: HUMAN-PLASMA PREKALLIKREIN; AMINO-ACID-SEQUENCE; KAPPA-CASEIN; MONOCLONAL-ANTIBODIES; MAMMARY-GLAND; CELL-LINES; INHIBITOR; PURIFICATION; MASTITIS; EXPRESSION

Research Fronts: 92-1091 005 (UROKINASE-TYPE PLASMINOGEN-ACTIVATOR; VASCULAR SMOOTH-MUSCLE CELLS; EFFECT OF BASIC FIBROBLAST GROWTH-FACTOR)
92-3056 001 (UPTAKE OF SURFACTANT PROTEIN-B; CASEIN KINASE-II; CATALYTIC SUBUNITS)

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ZACHOS T, 1992, V59, P461, J DAIRY RES

8/9/4 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01582022 Genuine Article#: HJ748 Number of References: 56
Title: IDENTIFICATION OF A HUMAN LACTOFERRIN-BINDING PROTEIN IN STAPHYLOCOCCUS-AUREUS
Author(s): NAIDU AS; ANDERSSON M; FORSGREN A
Corporate Source: UNIV LUND,MALMO GEN HOSP,DEPT MED MICROBIOL/S-21401 MALMO//SWEDEN/
Journal: JOURNAL OF MEDICAL MICROBIOLOGY, 1992, V36, N3 (MAR), P177-183
Language: ENGLISH Document Type: ARTICLE
Geographic Location: SWEDEN
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: MICROBIOLOGY
Abstract: Human lactoferrin (HLf) is an iron-binding protein with antimicrobial activity that is present in high concentrations in milk and various exocrine secretions. HLf is also an acute-phase protein secreted by polymorphonuclear leucocytes, and its binding to a large number of clinical isolates of Staphylococcus aureus has been described recently from our laboratory. We have now characterised the HLf-staphylococcal interaction in S. aureus strain MAS-89. The binding of I-125-HLf to strain MAS-89 reached saturation in < 90 min and was maximal between pH 4 and 9. Unlabelled HLf displaced I-125-HLf binding. Various plasma and subepithelial matrix proteins, such as IgG, fibrinogen, fibronectin, collagen and laminin, which are known to interact specifically with S. aureus, did not interfere with HLf binding. A Scatchard plot was non-linear; this implied a low affinity (1.55 x 10(7) L/mol) and a high affinity (2.70 x 10(8) L/mol) binding mechanism. We estimated that there were c. 5700 HLf binding sites/cell. The staphylococcal HLf-binding protein (HLf-BP) was partially

susceptible to proteolytic enzymes or periodate treatment and was resistant to glycosidases. An active HLf-BP with an apparent M(r) of c. 450 Kda was isolated from strain MAS-89 cell lysate by ion-exchange chromatography on Q-sepharose. In SDS-PAGE, the reduced HLf-BP was resolved into two components of 67 and 62 Kda. The two components demonstrated a positive reaction with HLf-HRPO in a Western blot. These data establish that there is a specific receptor for HLf in S. aureus.

Identifiers--KeyWords Plus: SHOCK SYNDROME TOXIN-1; NEISSERIA-MENINGITIDIS; CELL-SURFACE; TRANSFERRIN; RECEPTORS; SEQUENCE; NEUTROPHILS; GONORRHOEAE; INVITRO; IRON

Research Fronts: 90-0022 001 (PORCINE SERUM TRANSFERRIN; IRON REMOVAL; N-TERMINAL LOBE)

90-2698 001 (IGG BINDING BACTERIAL PROTEIN; AFFINITY IMMOBILIZATION; ANTI-HLA ANTIBODIES; SURFACE OF STAPHYLOCOCCUS-AUREUS; RAPID DETECTION; CHEMILUMINESCENCE RESPONSE)

90-3110 001 (IDENTIFICATION OF FRAGMENTS; CORTICOSTEROIDS INCREASE LIPOCORTIN-I; RAS ADENYLATE-CYCLASE PATHWAY; HEAT-SHOCK PROTEIN HSP70 FAMILY)

90-3473 001 (TRANSFERRIN RECEPTOR EXPRESSION; IRON ACQUISITION; OUTER-MEMBRANE PROTEINS IN NEISSERIA-MENINGITIDIS; BACTERIAL VIRULENCE; VIBRIO-CHOLERAE NON-O1)

90-7332 001 (HUMAN NEUTROPHIL RESPIRATORY BURST OXIDASE; LEUKOCYTE ACTIVATION; MYELOMONOCYTIC CELLS)

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8/9/5 (Item 1 from file: 71)
DIALOG(R)File 71:ELSEVIER BIOBASE

00115366 94104017
The plasminogen activation system in bovine milk: Differential localization of tissue-type plasminogen activator and urokinase in milk fractions is caused by binding to casein and urokinase receptor

Heegaard C.W.; Rasmussen L.K.; Andreasen P.A.
ADDRESS: C.W. Heegaard, Department of Molecular Biology, University of Arhus, C.F. Mollers Alle 130, 8000 Arhus C, Denmark
Journal: Biochimica et Biophysica Acta - Molecular Cell Research, 1222/1 (45-55), 1994, Netherlands
PUBLICATION DATE: 19940000
CODEN: BAMRD
ISSN: 0167-4889
DOCUMENT TYPE: Article
LANGUAGES: English SUMMARY LANGUAGES: English

We have analyzed the occurrence of components of the plasminogen activation system in bovine milk. Zymographic analyses showed that tissue-type plasminogen activator (t-PA) occurred in association with casein micelles, partially as a complex with type-1 plasminogen activator inhibitor (PAI-1), whereas urokinase-type plasminogen activator (u-PA) was confined to milk leukocytes. Whey contained a component with a plasminogen dependent proteolytic activity which was shown to be plasma prekallikrein (PPK). The U-PA in the milk leukocytes was shown to be bound to urokinase receptor (u-PAR). A purification to near-homogeneity of the bovine u-PAR was undertaken. Investigating the novel t-PA binding to casein micelles by ligand blotting and Sepharose immobilized casein, multimeric forms of kappa-casein and dimeric alpha(s2)-casein were identified as t-PA binding components. The kappa-casein gene and the fibrinogen gene are believed to have evolved from a common ancestor. Thus, the recent finding that casein enhances t-PA catalyzed plasminogen activation (Marcus, G., Hitt, S., Harvey, S.R. and Tritsch, G.L. (1993) Fibrinolysis 7, 229-236), and the observed t-PA/casein binding suggests that the casein micelle, which also contains plasminogen, may serve as a matrix for t-PA-catalyzed plasminogen activation in milk.

DESCRIPTORS:
Urokinase; Tissue-type plasminogen activator; t-PA; Type-1 plasminogen

inhibitor; Milk; Casein; Urokinase receptor; T-PA binding
? ds

Set Items Description
S1 156 FIBRINOGEN AND MILK
S2 0 S1 AND (CEX OR "CATION EXCHANGE")
S3 5 S1 AND SEPHAROSE?
S4 0 S1 AND CATION AND RESIN
S5 10 S1 AND PH
S6 3 S1 AND CATION?
S7 39043 S-SEPHAROSE? OR SP-SEPHAROSE? OR FRACTOGEL? OR SEPHAROSE?
S8 5 S1 AND S7
? s tris-acetate or "tris acetate"
6 TRIS-ACETATE
1 TRIS ACETATE
S9 7 TRIS-ACETATE OR "TRIS ACETATE"
? s s1 and s9
156 S1
7 S9
S10 0 S1 AND S9
? type s9/full/all

9/9/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

14081350 BIOSIS NO.: 200300075379
Agarose and polyacrylamide gel electrophoresis.
BOOK TITLE: Methods in Molecular Biology PCR mutation and detection protocols
AUTHOR: Guilliatt Andrea M(a)
BOOK AUTHOR/EDITOR: Theophilus Bimal D M; Rapley Ralph: Eds
AUTHOR ADDRESS: (a)Department of Haematology, Birmingham Children's Hospital NHS Trust, Birmingham, UK**UK
JOURNAL: Methods in Molecular Biology 187p1-11 2002
MEDIUM: print
BOOK PUBLISHER: Humana Press Inc., 999 Riverview Drive, Suite 208, Totowa, NJ, 07512, USA
ISSN: 1064-3745 ISBN: 0-89603-617-0 (cloth)
DOCUMENT TYPE: Book
RECORD TYPE: Citation
LANGUAGE: English
REGISTRY NUMBERS: 60-00-4: EDTA; 25702-74-3: FICOLL; 110-26-9: N N'-METHYLENE-BIS-ACRYLAMIDE; 110-18-9: TEMED; 6850-28-8: TRIS-ACETATE; 79-06-1: ACRYLAMIDE; 7727-54-0: AMMONIUM PERSULFATE ; 115-39-9: BROMOPHENOL BLUE; 75-78-5: DIMETHYL DICHLOROSILANE; 1239-45-8: ETHIDIUM BROMIDE; 56-81-5: GLYCEROL; 57-50-1: SUCROSE
DESCRIPTORS:
MAJOR CONCEPTS: Equipment, Apparatus, Devices and Instrumentation; Methods and Techniques; Molecular Genetics (Biochemistry and Molecular Biophysics); Radiation Biology
CHEMICALS & BIOCHEMICALS: DNA; EDTA; Ficoll; N,N'-methylene-bis-acrylamide; TEMED; Tris-acetate; Tris-borate; acrylamide; ammonium persulfate; bromophenol blue; dimethyl dichlorosilane--siliconizing solution; electrophoresis buffer ; ethidium bromide--fluorescent dye; glycerol; nucleic acids; sucrose
METHODS & EQUIPMENT: UV transilluminator--laboratory equipment; agarose gel--laboratory equipment; agarose gel electrophoresis protocol--electrophoretic techniques, laboratory techniques; gel caster--laboratory equipment; gel documentation system--laboratory equipment; gel tank--laboratory equipment; gel tray--laboratory equipment; glass

plates--laboratory equipment; hot plate--laboratory equipment; microwave oven--laboratory equipment; polyacrylamide gel--laboratory equipment; polyacrylamide gel electrophoresis protocol--electrophoretic techniques, laboratory techniques; ultraviolet radiation--laboratory techniques, spectrum analysis techniques
MISCELLANEOUS TERMS: electrophoretic mobility; gel matrix composition; gel matrix concentration; Book Chapter
CONCEPT CODES:
03502 Genetics and Cytogenetics-General
06502 Radiation-General
10060 Biochemical Studies-General
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
10068 Biochemical Studies-Carbohydrates

9/9/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13538753 BIOSIS NO.: 200200167574
Antigene effect in K562 cells of a PEG-conjugated triplex-forming oligonucleotide targeted to the bcr/abl oncogene.
AUTHOR: Rapozzi Valentina; Cogoi Susanna; Spessotto Paola; Risso Angela; Bonora Gian Maria; Quadrifoglio Franco; Xodo Luigi Emilio(a)
AUTHOR ADDRESS: (a)Department of Biomedical Sciences and Technologies, School of Medicine, Piazzale Kolbe 4, 33100, Udine**Italy E-Mail: lxodo@makek.dstb.uniud.it
JOURNAL: Biochemistry 41 (2):p502-510 January 15, 2002
MEDIUM: print
ISSN: 0006-2960
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Triplex-forming oligonucleotides are able to modulate gene expression by site-specific binding to genomic DNA. Their use as therapeutic agents is limited by inefficient cellular uptake, scarce nuclear internalization, and oligonucleotide self-aggregation. In this study, we demonstrate that a 13-mer AG motif oligonucleotide covalently linked to a high-molecular mass (9000 Da) polyethylene glycol (PEG ODN13) exhibits uptake and biological properties that are superior to those of the nonconjugated isosequence analogue (free ODN13). Band-shift and footprinting experiments showed that PEG ODN13 forms a stable triple helix (apparent Kd between 10-6 and 10-7 M in 50 mM Tris-acetate, 10 mM MgCl2, pH 7.4, 37degreeC) with a natural polypurine-polypyrimidine target located in the 5' flanking region of the human bcr/abl oncogene. Confocal laser microscopy performed on unfixed live cells stained with hexidium iodide as well as on glass-fixed cells stained with propidium iodide showed that fluorescein-labeled PEG ODN13 is far more efficiently taken up and internalized in the nucleus by K562 and HeLa cells than the nonconjugated free ODN13. It was found that PEG ODN13 specifically downregulated the transcription of bcr/abl mRNA at 65+-5% with respect to control and inhibited cell growth by 32+-3% in a 3 day liquid culture assay. Moreover, PEG ODN13 was more resistant against S1 and fetal bovine serum nucleases than free ODN13, and less inclined to self-associate into multistrand structures in solution. Taken together, these results provide useful elements for designing artificial transcription repressors with enhanced potency in vivo.

REGISTRY NUMBERS: 6850-28-8: TRIS-ACETATE; 7786-30-3: MAGNESIUM CHLORIDE; 25322-68-3: POLYETHYLENE GLYCOL
DESCRIPTORS:

MAJOR CONCEPTS: Cell Biology; Methods and Techniques; Molecular Genetics (Biochemistry and Molecular Biophysics)
BIOSYSTEMATIC NAMES: Hominidae--Primates, Mammalia, Vertebrata, Chordata, Animalia
ORGANISMS: HeLa cell line (Hominidae); K562 cell line (Hominidae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Animals; Chordates; Humans; Mammals; Primates; Vertebrates
CHEMICALS & BIOCHEMICALS: DNA; Tris-acetate--reagent; mRNA {messenger RNA}; magnesium chloride--reagent; polyethylene glycol {PEG}--reagent
GENE NAME: human bcr/abl gene (Hominidae)--oncogene
METHODS & EQUIPMENT: DNA footprinting--genetic method, recombinant DNA technology; confocal laser microscopy--confocal microscopy, microscopy method; hexidium iodide staining--Histological/Cytological and Culture Techniques, staining; propidium iodide staining--nuclear staining, staining
CONCEPT CODES:
02502 Cytology and Cytochemistry-General
02508 Cytology and Cytochemistry-Human
03502 Genetics and Cytogenetics-General
03508 Genetics and Cytogenetics-Human
10060 Biochemical Studies-General
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
BIOSYSTEMATIC CODES:
86215 Hominidae

9/9/3 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12518128 BIOSIS NO.: 200000271630
Quantitative studies on the adsorption of proteins to the bare silica wall in capillary electrophoresis: II. Effects of adsorbed, neutral polymers on quenching the interaction.
AUTHOR: Verzola Barbara; Gelfi Cecilia; Righetti Pier Giorgio(a)
AUTHOR ADDRESS: (a)Department of Agricultural and Industrial Biotechnology, University of Verona, Strada le Grazie, Ca Vignal, 37134, Verona**Italy
JOURNAL: Journal of Chromatography A 874 (2):p293-303 April 7, 2000
MEDIUM: print.
ISSN: 0021-9673
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: A novel method is reported for quantifying protein adsorption to naked silica tubings and for assessing the efficacy of polymers added to the background electrolyte as dynamic wall modifiers. It consisted of flushing a fluorescently-labelled protein (myoglobin) into a capillary equilibrated in Tris-acetate buffer, pH 5.0, until full saturation of the potential adsorbing sites. Desorption was then affected by electrophoretically driving sodium dodecyl sulphate micelles into the capillary from the cathodic reservoir: the peak of eluted material is quantified by using a dual laser beam instrument able to read the fluorescein isothiocyanate-derivatized myoglobin at 520 nm and the internal standard (sulphorodamine) at 630 nm. Four polymers have been assessed as potential quenchers of interaction of proteins with the silica wall: hydroxypropylmethyl-cellulose (HPMC, Mr=1 000 000), hydroxyethylcellulose (HEC, Mr=27 000), poly(vinyl alcohol) (PVA, Mr=49 000) and short-chain poly(dimethylacrylamide) (poly(DMA)) (average Mr ca. 150 000). HPMC, poly(DMA) and PVA were effective in the 0.005 to 0.02%

(w/v) range, whereas HEC was active in the 0.1 to 0.8% concentration range. All polymers, however, except for poly(DMA), exhibited a rather poor performance in suppressing protein interactions with the siliceous surface, and could inhibit adsorption only by, at most, 50% (contrary to oligoamines which can quench such interactions by >90%). It is hypothesized that dynamically adsorbed polymers leave ample regions of the capillary inner surface unmasked, thus allowing strong interactions of proteins with the silica wall. This is also confirmed by the modest reduction of electroendoosmotic flow upon polymer adsorption, as compared with an untreated silica surface. Although poly(DMA) can inhibit protein adsorption by as much as 85%, its hydrophobic nature could in turn provide more adsorption sites for less hydrophilic proteins than myoglobin.

REGISTRY NUMBERS: 6850-28-8: TRIS-ACETATE; 9004-62-0: HYDROXYETHYLCELLULOSE; 9004-65-3: HYDROXYPROPYLMETHYLCELLULOSE; 26793-34-0: POLY(DIMETHYLACRYLAMIDE); 9002-89-5: POLY(VINYL ALCOHOL
DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Methods and Techniques
CHEMICALS & BIOCHEMICALS: Tris-acetate--buffer; hydroxyethylcellulose--Polysciences, polymer; hydroxypropylmethylcellulose--Aldrich, polymer; myoglobin--Sigma, quantitative analysis; poly(dimethylacrylamide)--Fluka, polymer; poly(vinyl alcohol)--Fluka, polymer; proteins--quantitative analysis; sulforhodamine--internal standard
METHODS & EQUIPMENT: capillary electrophoresis--analytical method, electrophoretic techniques
CONCEPT CODES:
10054 Biochemical Methods-Proteins, Peptides and Amino Acids
01004 Methods, Materials and Apparatus, General-Laboratory Methods
10050 Biochemical Methods-General

9/9/4 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12305258 BIOSIS NO.: 200000063125
Determination of methacrylic acid in the drain of a biotrickling filter using isotachophoresis and capillary zone electrophoresis.
AUTHOR: de Ridder Ronny; Prickaerts Ramona M H; Reijenga Jetse C(a); Verheggen Theo P E M
AUTHOR ADDRESS: (a)Laboratory of Instrumental Analysis, Eindhoven University of Technology, 5600 MB, Eindhoven**Netherlands
JOURNAL: Journal of Chromatography A 862 (2):p237-242 Nov. 12, 1999
ISSN: 0021-9673
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: The performance of a biotrickling filter for treatment of concentrated waste gases was investigated. The macrokinetics of methylmethacrylate degradation in the biotrickling filter is studied by measuring the degradation product methacrylic acid in the drain of the filter. The drain was analysed using isotachophoresis (ITP) and capillary zone electrophoresis (CZE). The CZE analyses were carried out in an I.D. 75 mum capillary at 20 kV (negative inlet polarity) using a 0.01 M Tris-acetate buffer of pH 4.45. The electroosmotic flow (EOF) was suppressed by addition of CTA and PVA to the buffer. Detection was at 214 nm. After filtration through a 0.45-mum filter, samples were directly

injected. The calibration graph was linear between 10 and 800 mg/l methacrylic acid, with an analysis time under 2 min.

REGISTRY NUMBERS: 6850-28-8: TRIS-ACETATE; 79-41-4: METHACRYLIC ACID
DESCRIPTORS:
MAJOR CONCEPTS: Chemistry; Methods and Techniques
CHEMICALS & BIOCHEMICALS: Tris-acetate--buffer; methacrylic acid --analysis
METHODS & EQUIPMENT: Beckman P/ACE 2000 capillary electrophoresis instrument--equipment; biotrickling filter--equipment; capillary zone electrophoresis--analytical method, electrophoretic techniques; isotachophoresis--analytical method, electrophoretic techniques
CONCEPT CODES:
10050 Biochemical Methods-General
10504 Biophysics-General Biophysical Techniques

9/9/5 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11959459 BIOSIS NO.: 199900205568
Effect of curing with NaCl solution on drying characteristics of fish meat and its textural changes during drying.
AUTHOR: Iseya Zensuke; Sugiura Satoshi; Saeki Hiroki(a)
AUTHOR ADDRESS: (a)Faculty of Fisheries, Hokkaido University, Hakodate, Hokkaido, 041-8611**Japan
JOURNAL: Fisheries Science (Tokyo) 64 (6):p969-972 Dec., 1998
ISSN: 0919-9268
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Atka mackerel meats cured with 0.5-2.0 M NaCl containing 20 mM Tris-acetate (pH 7.0) were incubated at 15degreeC, 30degreeC and 50degreeC and in 60% relative humidity for 0-16 hours, and their drying characteristics and textural change during drying at different temperatures were simultaneously investigated. Slow moisture vaporization occurred at the initial drying period and the critical moisture content significantly decreased with an increase in the NaCl content of cured meats. In addition, the reduction of the drying rate in the later drying period was suppressed when 0.5 mol/kg of NaCl were contained in the cured meats. Furthermore, at 15degreeC and 30degreeC drying, the increase in the shear force of dried products with the decrease in the moisture content was effectively suppressed by the curing with NaCl. Such changes in the drying characteristics and texture would contribute to depression of the excess hardening and obtaining a long shelf-life of dried products.

REGISTRY NUMBERS: 7647-14-5: SODIUM CHLORIDE; 6850-28-8: TRIS ACETATE
DESCRIPTORS:
MAJOR CONCEPTS: Foods
BIOSYSTEMATIC NAMES: Osteichthyes--Pisces, Vertebrata, Chordata, Animalia
ORGANISMS: Pleurogrammus azonus {atka mackerel} (Osteichthyes)--commercial species
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Animals; Chordates; Fish; Nonhuman Vertebrates; Vertebrates
CHEMICALS & BIOCHEMICALS: sodium chloride {NaCl}; tris acetate
MISCELLANEOUS TERMS: critical moisture content; drying characteristics ; fish meat--fish; moisture vaporization; relative humidity; shear force; shelf-life; temperature; texture change

CONCEPT CODES:
13502 Food Technology-General; Methods
23001 Temperature: Its Measurement, Effects and Regulation-General Measurement and Methods
62510 Chordata, General and Systematic Zoology-Pisces
BIOSYSTEMATIC CODES:
85206 Osteichthyes

9/9/6 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11844944 BIOSIS NO.: 199900091053
Formation of stable DNA triple helices within the human bcr promoter at a critical oligopurine target interrupted in the middle by two adjacent pyrimidines.
AUTHOR: Xodo Luigi E(a); Manzini Giorgio; Quadrifoglio Franco
AUTHOR ADDRESS: (a)Dep. Biomed. Sci. and Technol., Sch. Med., Univ. Udine, Via Gervasutta 48, 33100 Udine**Italy
JOURNAL: Antisense & Nucleic Acid Drug Development 8 (6):p477-488 Dec., 1998
ISSN: 1087-2906
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Antigene strategies based on the use of triplex-forming oligonucleotides (TFO) as artificial repressors are constrained by the need for genomic targets with a polypurinecntdotpolypyrimidine (poly (RcntdotY)) DNA motif. In this study, we demonstrate that both A/G and G/T motif oligonucleotides recognize and bind strongly to a critical polypurine sequence interrupted in the middle by two adjacent cytosines and located in the promoter of the human bcr gene at the transcription initiation. The interaction between the designed TFO and this irregular poly (RcntdotY) target has been studied using a number of techniques, including electrophoretic mobility shift assay (EMSA), circular dichroism (CD), DNase I, and dimethyl sulfate (DMS) footprinting. Although CD shows that the 24-mer TFO self-aggregate in solution, they bind to the bcr target at 37degreeC, forming stable triplexes that do not dissociate during electrophoretic runs performed up to 50degreeC in 50 mM Tris-acetate, pH 7.4, 10 mM MgCl2, 50 mM NaCl (buffer A). We used EMSA to determine the equilibrium dissociation constants (Kd) for the reaction T tautm D + TFO at 37degreeC, either in buffer A or in 50 mM Tris-acetate, pH 7.4, 10 mM MgCl2, 5 mM NaCl (buffer B). The triplexes were found to be more stable in buffer B, a behavior that can be rationalized in terms of monovalent and divalent cation competition for binding to DNA. Footprinting experiments showed that the TFO interact with the irregular poly (RcntdotY) target in a highly sequence-specific way and that the A/G motif oligonucleotide, juxtaposing T to the double CG inversions of the target, formed the most stable triplex (e.g., 1 muM TFO promoted strong footprints at 37degreeC). These triplexes, except the one containing two AcntdotCcntdotG mismatched triads, are not destabilized under near physiologic conditions, that is, in 50 mM Tris-acetate, pH 7.4, 80 mM KCl, 20 mM NaCl, 2 mM spermidine. Moreover, we found that guanine N7 in TcntdotCcntdotG and guanine N7 in AcntdotCcntdotG are both accessible to DMS and that the first is less reactive than the second. In conclusion, the results of this study indicate that a critical sequence in the human bcr promoter may be used as a potential binding site for TFO designed to repress artificially the transcription of the fused bcr/abl gene expressed in leukemia cells.

REGISTRY NUMBERS: 289-95-2D: PYRIMIDINES; 6850-28-8: TRIS-ACETATE; 7786-30-3: MAGNESIUM CHLORIDE; 7647-14-5: SODIUM CHLORIDE; 9003-98-9: DNASE I; 77-78-1: DIMETHYL SULFATE
DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Methods and Techniques
ORGANISMS: PARTS ETC: leukemia cells
CHEMICALS & BIOCHEMICALS: human bcr promoter; magnesium chloride--reagent; sodium chloride--buffer; DNA triple helices--analysis; Tris-acetate--reagent; human bcr/acr gene (Hominidae
METHODS & EQUIPMENT: circular dichroism--analytical method, spectroscopic techniques--CB; dimethyl sulfate footprinting--Recombinant DNA Technology, genetic method; electrophoretic mobility shift assay--analytical method, restriction fragment mapping; DNase I footprinting --DNA footprinting, genetic method
CONCEPT CODES:
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
02508 Cytology and Cytochemistry-Human
03508 Genetics and Cytogenetics-Human
10504 Biophysics-General Biophysical Techniques
10804 Enzymes-Methods
15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
10060 Biochemical Studies-General
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
BIOSYSTEMATIC CODES:
86215 Hominidae

9/9/7 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10417162 BIOSIS NO.: 199699038307
Identification of a new restriction endonuclease R. BcrAI, from Bacillus cremoris.
AUTHOR: Piekarowicz Andrzej; Skowronek Krzysztof
AUTHOR ADDRESS: Inst. Microbiol., Warsaw Univ., Nowy Swiat 67, 00-046 Warsaw**Poland
JOURNAL: Acta Microbiologica Polonica 44 (3-4):p315-316 1995
ISSN: 0137-1320
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Site specific restriction endonuclease R. BcrAI has been purified from Bacillus cremoris. The enzyme recognize the sequence 5' CTCTTC 3'.

REGISTRY NUMBERS: 9055-11-2: ENDONUCLEASE; 6850-28-8: TRIS-ACETATE; 142-72-3: MAGNESIUM ACETATE; 127-08-2: POTASSIUM ACETATE; 60-24-2: 2-MERCAPTOETHANOL
DESCRIPTORS:
MAJOR CONCEPTS: Enzymology (Biochemistry and Molecular Biophysics); Genetics; Physiology
BIOSYSTEMATIC NAMES: Endospore-forming Gram-Positives--Eubacteria, Bacteria
ORGANISMS: endospore-forming gram-positive rods and cocci (Endospore-forming Gram-Positives); Bacillus cremoris

(Endospore-forming Gram-Positives)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria; microorganisms
CHEMICALS & BIOCHEMICALS: ENDONUCLEASE; TRIS-ACETATE; MAGNESIUM ACETATE; POTASSIUM ACETATE; 2-MERCAPTOETHANOL
MISCELLANEOUS TERMS: CLEAVAGE SITE; MAGNESIUM ACETATE; POTASSIUM ACETATE; TRIS-ACETATE; 2-MERCAPTOETHANOL
CONCEPT CODES:
10806 Enzymes-Chemical and Physical
31000 Physiology and Biochemistry of Bacteria
31500 Genetics of Bacteria and Viruses
10060 Biochemical Studies-General
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10506 Biophysics-Molecular Properties and Macromolecules
BIOSYSTEMATIC CODES:
07810 Endospore-forming Gram-Positives (1992-)
? s s1 and buffer?
156 S1
181035 BUFFER?
S11 3 S1 AND BUFFER?
? type s11/full/all

11/9/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06569471 BIOSIS NO.: 000087011632
OUTERMOST-CELL-SURFACE CHANGES IN AN ENCAPSULATED STRAIN OF STAPHYLOCOCCUS-AUREUS AFTER PRESERVATION BY FREEZE-DRYING
AUTHOR: OHTOMO T; YAMADA T; YOSHIDA K
AUTHOR ADDRESS: DEP. MICROBIOL., ST. MARIANNA UNIV. SCH. MED., 2-16-1 SUGAO, MIYAMAYE-KU, KAWASAKI 213, JAPAN.
JOURNAL: APPL ENVIRON MICROBIOL 54 (10). 1988. 2486-2491. 1988
FULL JOURNAL NAME: Applied and Environmental Microbiology
CODEN: AEMID
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The effects of drying time during freeze-drying on the outermost cell surface of an encapsulated strain of Staphylococcus aureus S-7 (Smith, diffuse) were investigated, with special attention paid to capsule and slime production. To quantify capsule and slime production, capsule antigen production and cellular characteristics such as growth type in serum-soft agar, cell volume index, and clumping factor reaction were examined. After freeze-drying the colonial morphology of strain S-7 was altered from a diffuse to a compact type in serum-soft agar. In accordance with these changes, the titer of the clumping factor reaction increased while the cell volume index, capsule and slime production, and capsule antigen production were markedly decreased in parallel with the period of freeze-drying. The ability of the strain to adhere to collagen, fibrinogen, and soybean lectin was also compared before and after freeze-drying. Fibrinogen levels slightly incrased when 10% skim milk and 2% honey were used as cryoprotective agents and showed a remarkable increase when 0.05 M phosphate buffer was used as a control. Also, the ability of strain S-7 to adhere to soybean lectin declined, whereas no changes were observed for collagen under any conditions. Strain S-7 was phage nontypable before freeze-drying but the number of typable cells increased after freeze-drying; phage-typable cells reacted to phage 52 alone after 5 h of freeze-drying, but additional cells also proved to be phage typable to page 42E after 10 h. Electron micrographs indicated that strain S-7, an encapsulated strain, was converted to an unencapsualted state after freeze-drying. Results of

our study indicate that the freeze-drying process inhibits capsule and slime production in S. aureus, which consequently brings about changes in the outermost cell surface.

DESCRIPTORS: SLIME CAPSULE ANTIGEN ADHERENCE PHAGE TYPING
CONCEPT CODES:
10616 External Effects-Temperature as a Primary Variable-Cold (1971-)
23004 Temperature: Its Measurement, Effects and Regulation-Cryobiology
31000 Physiology and Biochemistry of Bacteria
32300 Microbiological Ultrastructure (1972-)
32500 Tissue Culture, Apparatus, Methods and Media
33504 Virology-Bacteriophage
01058 Microscopy Techniques-Electron Microscopy
10010 Comparative Biochemistry, General
10050 Biochemical Methods-General
10060 Biochemical Studies-General
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10614 External Effects-Temperature as a Primary Variable (1971-)
13002 Metabolism-General Metabolism; Metabolic Pathways
15001 Blood, Blood-Forming Organs and Body Fluids-General; Methods
23001 Temperature: Its Measurement, Effects and Regulation-General Measurement and Methods
31500 Genetics of Bacteria and Viruses
32000 Microbiological Apparatus, Methods and Media
34504 Immunology and Immunochemistry-Bacterial, Viral and Fungal
51522 Plant Physiology, Biochemistry and Biophysics-Chemical Constituents
BIOSYSTEMATIC CODES:
02110 Bacterial Viruses-Unspecified (1981-)
05510 Micrococcaceae (1979-)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Microorganisms
Viruses
Bacteria

11/9/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04901416 Genuine Article#: UQ490 Number of References: 40
Title: TIME AND TEMPERATURE ASPECTS OF BETA-LACTOGLOBULIN REMOVAL FROM METHYLATED SILICA SURFACES BY SODIUM DODECYL-SULFATE
Author(s): KARLSSON CAC; WAHLGREN MC; TRAGARDH AC
Corporate Source: LUND UNIV,DEPT FOOD TECHNOL/S-22100 LUND//SWEDEN/; LUND UNIV,DEPT FOOD ENGN/S-22100 LUND//SWEDEN/
Journal: COLLOIDS AND SURFACES B-BIOINTERFACES, 1996, V6, N4-5 (MAY 22), P 317-328
ISSN: 0927-7765
Language: ENGLISH Document Type: ARTICLE
Geographic Location: SWEDEN
Subfile: SciSearch
Journal Subject Category: BIOPHYSICS; BIOCHEMISTRY & MOLECULAR BIOLOGY
Abstract: The adsorption of beta-lactoglobulin onto methylated silica surfaces and the subsequent protein removal by the anionic surfactant sodium dodecyl sulphate (SDS) were followed using in-situ ellipsometry. Experiments were performed at pH 6.0 in phosphate-buffered saline solution. Parameters varied include temperature, length of time for protein adsorption from solution and surface residence time of beta-lactoglobulin. The temperature was kept constant throughout a trial, and the majority of experiments were carried out at a few degrees below the protein denaturation temperature as reported from

differential scanning calorimetry studies. beta-Lactoglobulin adsorption at high temperatures resulted in aggregation at the surface after a lag phase of several minutes. Varying the protein adsorption time and thus the amount adsorbed while keeping the protein surface residence time fixed did not seem to affect the amount desorbed upon rinsing or the amount eluted by surfactant. For short beta-lactoglobulin adsorption times, the adsorbed amounts were comparable at all temperatures studied. The temperature hardly affected the amount desorbed during rinsing, but did however have a pronounced influence on the protein removed by surfactant. Up to around 60 degrees C practically all beta-lactoglobulin was eluted by the SDS. The fraction removed then decreased with temperature, with a sharp drop between 70 and 73 degrees C, and a further decline at higher levels. SDS was seen to be highly inefficient at removing beta-lactoglobulin adsorbed at temperatures above 70 degrees C. The trend observed is attributed to temperature-dependent changes in the protein resident on the surface. The beta-lactoglobulin surface residence time was seen to significantly affect the elutability. At short residence times the removal efficiency was comparably high, but decreased with time. However, no significant difference could be detected between two sufficiently long residence times. The behaviour is consistent with the assumption of multiple states of adsorbed proteins, together with slow conformational changes in the adsorbed protein layer.

Descriptors--Author Keywords: ADSORPTION ; ANIONIC SURFACTANT ; ELUTABILITY ; HYDROPHOBIC SURFACE ; BETA-LACTOGLOBULIN
Identifiers--KeyWords Plus: ADSORPTION BEHAVIOR; ADSORBED FIBRINOGEN; SOLID-SURFACES; SULFATE; ELLIPSOMETRY; PROTEINS; MILK; DENATURATION; ELUTABILITY; DETERGENT
Research Fronts: 94-0963 001 (PROTEIN ADSORPTION; HYDROPHILIC SILICA SURFACES; ADSORBED FIBRIN(OGEN))
94-1497 001 (CORRUGATED DIFFRACTION GRATINGS IN UNIAXIAL CRYSTALS; GENERAL TRANSVERSELY ISOTROPIC MEDIA; DIFFERENT MAGNETIC PERMEABILITIES; PLANAR BOUNDARIES)

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11/9/3 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03524502 Genuine Article#: PK266 Number of References: 33
Title: INFLUENCE OF PREADSORBED MILK-PROTEINS ON ADHESION OF LISTERIA-MONOCYTOGENES TO HYDROPHOBIC AND HYDROPHILIC SILICA SURFACES
Author(s): ALMAKHLAFI H; MCGUIRE J; DAESCHEL M
Corporate Source: OREGON STATE UNIV,DEPT BIORESOURCE ENGN,GILMOREHALL 116/CORVALLIS//OR/97331; OREGON STATE UNIV,DEPT BIORESOURCE ENGN/CORVALLIS//OR/97331; OREGON STATE UNIV,DEPT FOOD SCI & TECHNOL/CORVALLIS//OR/97331; WESTERN CTR DAIRY PROT RES & TECHNOL/CORVALLIS//OR/97331
Journal: APPLIED AND ENVIRONMENTAL MICROBIOLOGY, 1994, V60, N10 (OCT), P 3560-3565
ISSN: 0099-2240
Language: ENGLISH Document Type: ARTICLE
Geographic Location: USA
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences; CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences
Journal Subject Category: BIOTECHNOLOGY & APPLIED MICROBIOLOGY
Abstract: The adsorption of beta-lactoglobulin, bovine serum albumin, alpha-lactalbumin, and beta-casein for 8 h and beta-lactoglobulin and bovine serum albumin for 1 h at silanized silica surfaces of low and high hydrophobicity, followed by incubation in buffer and contact with Listeria monocytogenes, resulted in different numbers of cells adhered per unit of surface area. Adhesion to both surfaces was greatest when beta-lactoglobulin was present and was lowest when bovine serum albumin was present. Preadsorption of alpha-lactalbumin and beta-casein showed an intermediate effect on cell adhesion. Adsorption of beta-lactoglobulin for 1 h resulted in a generally lower number of cells adhered compared with the 8-h adsorption time, while the opposite result was observed with respect to bovine serum albumin. The adhesion data were explainable in terms of the relative rates of arrival to the surface and postadsorptive conformational change among the proteins, in addition to the extent of surface coverage in each case.
Identifiers--KeyWords Plus: BOVINE SERUM-ALBUMIN; SOLID-SURFACES; BETA-LACTOGLOBULIN; POLYMER SURFACES; BACTERIAL ATTACHMENT; ADSORPTION-KINETICS; ALPHA-LACTALBUMIN; CONTACT-ANGLE; FIBRINOGEN; ELUTABILITY
Research Fronts: 92-1920 001 (RANDOM SEQUENTIAL ADSORPTION; ULTRAFINE POLYSTYRENE PARTICLES; NICKEL SURFACES)
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WAHLGREN MC, 1993, V70, P139, COLLOID SURFACE A
YANG JG, 1991, V54, P879, J FOOD PROTECT

? ds

Set	Items	Description
S1	156	FIBRINOGEN AND MILK
S2	0	S1 AND (CEX OR "CATION EXCHANGE")
S3	5	S1 AND SEPHAROSE?
S4	0	S1 AND CATION AND RESIN
S5	10	S1 AND PH
S6	3	S1 AND CATION?
S7	39043	S-SEPHAROSE? OR SP-SEPHAROSE? OR FRACTOGEL? OR SEPHAROSE?
S8	5	S1 AND S7
S9	7	TRIS-ACETATE OR "TRIS ACETATE"
S10	0	S1 AND S9
S11	3	S1 AND BUFFER?

? s s1 and (isolelectric? or pi)

	156	S1
	89	ISOLELECTRIC?
	155265	PI
S12	2	S1 AND (ISOLELECTRIC? OR PI)

? type s12/full/all

12/9/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06748007 BIOSIS NO.: 000088057438
THE IDENTIFICATION MAPS AND DEVELOPMENT CHANGES OF HORSE MILK PROTEINS IN LACTATION PERIOD BY MICROSCALE MULTISAMPLE TWO-DIMENSIONAL ELECTROPHORESIS
AUTHOR: YOKOHARMA M; AMANO T; MOGI K
AUTHOR ADDRESS: TOKYO UNIV., AGRIC., ABASHIRI-SHI 099-24, JPN.
JOURNAL: JPN J ZOOTECH SCI 60 (5). 1989. 450-458. 1989
FULL JOURNAL NAME: Japanese Journal of Zootechnical Science
CODEN: NICKA

RECORD TYPE: Abstract
LANGUAGE: JAPANESE

ABSTRACT: Proteins in tissue liquids can be analyzed by two-dimensional (2-D) electrophoresis and electroblotting techniques after running with 2-D electrophoresis. The developmental changes from colostrum to normal milk were studied by using 65 antisera of both human and horse origin, and then horse milk samples collected from mares within 1 hour to 2 weeks after parturition. A two-dimensional identification map of horse colostrum were first prepared and then the developmental changes in lactation period were observed by 2-D electrophoresis. The results were as follows: 1. Horse colostrum proteins were separated into 96 protein spots by 2-D electrophoresis. The colostrum proteins which could be identified by electroblotting-immunochemical staining techniques and by enzyme activity staining ones were comprised of the following 35 components; .alpha.-Lactalbumin (.alpha. La), Prealbumin (PA), .alpha.slCN), .alpha.1-Antitrysin (.alpha.1AT), .alpha.-Antichymotrypsin (.alpha.1X), Albumin (Al), Gc-globulin (Gc), Prothrombin (FII), C-reactive-protein (CRP), Antithrombin III (ATIII), Aliesterase (Ali-Es), .alpha.2-HS glycoprotein (.alpha.2 HS). Postalbumin (Xk), .beta.-Casein (.beta. CN), .alpha.-Acidglycoprotein (.alpha.1 AG), Transferrin (Tf), Lactoferrin (Lf), C 9, Ceruloplasmin (Cp), Haptoglobin (Hp), IgG (T), .alpha.1-Microglobulin (.alpha.1 Mi), C 1 q, Plasminogen (Pmg), C 7, C 4, C 3 c, IgG, IgA, Secretory IgA (SigA), Fibrinogen (Fg). .alpha.2-Macroglobulin (.alpha.2 M), Fibronetin (FN) and IgM. 2. As protein components stained with Coomassive Brilliant Blue R-250 (CBB), there were 72 protein spots in colostrum within 1 hour after parturition; after that, the number was decreased to 50, 31 and 20 spots in ones from about 9 to 14 hours, 24 to 72 hours, and 2 weeks, respectively. From these results and changes of immunoglobulin concentrations, milk within about 5 hours after parturition had characteristics of colosturm, after that, it changed a switch milk; ones passed 9 hours after parturition had already become a normal milk condition nutritionally. 3. Developmental changes from colostrum to normal milk could be observed by 2-D method. It means that 2-D electrophoresis can be applied for checking the quality level of colostrum and milks for colostrum bank. 4. Although protein components in colostrum were very similar to ones in plasma, five components of CN, La, Lf, SIgA and unknown milk components (M.C.) were observed as particular proteins in milk. Also, SIgA was detected in normal milk of 2 weeks after parturition, which showed a clearly different pattern as compared with IgG and IgM. 5. Polymorphisms of protease inhibitor (Pi-I), Es and Tf components could be detected in colstrum within about 5 hours after parturition, just as in serum.

DESCRIPTORS: PARTURITION COLOSTRUM LIVESTOCK INDUSTRY
CONCEPT CODES:
10010 Comparative Biochemistry, General
10054 Biochemical Methods-Proteins, Peptides and Amino Acids
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10504 Biophysics-General Biophysical Techniques
16504 Reproductive System-Physiology and Biochemistry
26506 Animal Production-Breeds and Breeding
BIOSYSTEMATIC CODES:
86145 Equidae
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):
Animals
Chordates
Vertebrates
Nonhuman Vertebrates
Mammals
Nonhuman Mammals

Perissodactyls

12/9/2 (Item 1 from file: 285)
DIALOG(R)File 285:BioBusiness(R)

00201361
THE IDENTIFICATION MAPS AND DEVELOPMENT CHANGES OF HORSE MILK PROTEINS IN LACTATION PERIOD BY MICROSCALE MULTISAMPLE TWO-DIMENSIONAL ELECTROPHORESIS.

Yokoharma M; Amano T; Mogi K
TOKYO UNIV., AGRIC., ABASHIRI-SHI 099-24, JPN.
Japanese Journal of Zootechnical Science Vol.60, No.5, p.450-458, 1989.
ISSN: 0021-5309
DOCUMENT TYPE: Article
LANGUAGE: Japanese RECORD TYPE: Abstract

ABSTRACT: Proteins in tissue liquids can be analyzed by two-dimensional (2-D) electrophoresis and electroblotting techniques after running with 2-D electrophoresis. The developmental changes from colostrum to normal milk were studied by using 65 antisera of both human and horse origin, and then horse milk samples collected from mares within 1 hour to 2 weeks after parturition. A two-dimensional identification map of horse colostrum were first prepared and then the developmental changes in lactation period were observed by 2-D electrophoresis. The results were as follows: 1. Horse colostrum proteins were separated into 96 protein spots by 2-D electrophoresis. The colostrum proteins which could be identified by electroblotting-immunochemical staining techniques and by enzyme activity staining ones were comprised of the following 35 components; .alpha.-Lactalbumin (.alpha. La), Prealbumin (PA), .alpha.slCN), .alpha.1-Antitrysin (.alpha.1AT), .alpha.-Antichymotrypsin (.alpha.1X), Albumin (Al), Gc-globulin (Gc), Prothrombin (FII), C-reactive-protein (CRP), Antithrombin III (ATIII), Aliesterase (Ali-Es), .alpha.2-HS glycoprotein (.alpha.2 HS). Postalbumin (Xk), .beta.-Casein (.beta. CN), .alpha.-Acidglycoprotein (.alpha.1 AG), Transferrin (Tf), Lactoferrin (Lf), C 9, Ceruloplasmin (Cp), Haptoglobin (Hp), IgG (T), .alpha.1-Microglobulin (.alpha.1 Mi), C 1 q, Plasminogen (Pmg), C 7, C 4, C 3 c, IgG, IgA, Secretory IgA (SigA), Fibrinogen (Fg). .alpha.2-Macroglobulin (.alpha.2 M), Fibronetin (FN) and IgM. 2. As protein components stained with Coomassive Brilliant Blue R-250 (CBB), there were 72 protein spots in colostrum within 1 hour after parturition; after that, the number was decreased to 50, 31 and 20 spots in ones from about 9 to 14 hours, 24 to 72 hours, and 2 weeks, respectively. From these results and changes of immunoglobulin concentrations, milk within about 5 hours after parturition had characteristics of colosturm, after that, it changed a switch milk; ones passed 9 hours after parturition had already become a normal milk condition nutritionally. 3. Developmental changes from colostrum to normal milk could be observed by 2-D method. It means that 2-D electrophoresis can be applied for checking the quality level of colostrum and milks for colostrum bank. 4. Although protein components in colostrum were very similar to ones in plasma, five components of CN, La, Lf, SIgA and unknown milk components (M.C.) were observed as particular proteins in milk. Also, SIgA was detected in normal milk of 2 weeks after parturition, which showed a clearly different pattern as compared with IgG and IgM. 5. Polymorphisms of protease inhibitor (Pi-I), Es and Tf components could be detected in colstrum within about 5 hours after parturition, just as in serum.

DESCRIPTORS: PARTURITION; COLOSTRUM; LIVESTOCK INDUSTRY
SUBJECT CODES & NAMES: 00300 -- ANIMAL PRODUCTION-BREEDS & BREEDING; 04600 -- PROTEINS & RELATED COMPOUNDS; 16200 -- REPRODUCTIVE SYSTEM;

72100 -- METHODS, MATERIALS & APPARATUS

FILE SEGMENT: NONUNIQUE
? ds

Set	Items	Description
S1	156	FIBRINOGEN AND MILK
S2	0	S1 AND (CEX OR "CATION EXCHANGE")
S3	5	S1 AND SEPHAROSE?
S4	0	S1 AND CATION AND RESIN
S5	10	S1 AND PH
S6	3	S1 AND CATION?
S7	39043	S-SEPHAROSE? OR SP-SEPHAROSE? OR FRACTOGEL? OR SEPHAROSE?
S8	5	S1 AND S7
S9	7	TRIS-ACETATE OR "TRIS ACETATE"
S10	0	S1 AND S9
S11	3	S1 AND BUFFER?
S12	2	S1 AND (ISOLELECTRIC? OR PI)

? s s3 or s5 or s6 or s8 or s9 or s11 or s12

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          5 S3
         10 S5
          3 S6
          5 S8
          7 S9
          3 S11
          2 S12
   S13    27 S3 OR S5 OR S6 OR S8 OR S9 OR S11 OR S12
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? s py<=1998

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Processing
Processing
   S1421302890 PY<=1998
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? s s13 and s14

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         27 S13
   21302890 S14
   S15    22 S13 AND S14
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? ds

Set	Items	Description
S1	156	FIBRINOGEN AND MILK
S2	0	S1 AND (CEX OR "CATION EXCHANGE")
S3	5	S1 AND SEPHAROSE?
S4	0	S1 AND CATION AND RESIN
S5	10	S1 AND PH
S6	3	S1 AND CATION?
S7	39043	S-SEPHAROSE? OR SP-SEPHAROSE? OR FRACTOGEL? OR SEPHAROSE?
S8	5	S1 AND S7
S9	7	TRIS-ACETATE OR "TRIS ACETATE"
S10	0	S1 AND S9
S11	3	S1 AND BUFFER?
S12	2	S1 AND (ISOLELECTRIC? OR PI)
S13	27	S3 OR S5 OR S6 OR S8 OR S9 OR S11 OR S12
S14	21302890	PY<=1998
S15	22	S13 AND S14